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VOL. VIII.

AUGUST AND NOVEMBER, 1849.

DUBLIN:

HODGES AND SMITH, GRAFTON-STREET.

LONDON: LONGMAN AND CO.; SIMPKIN AND CO.
EDINBURGH: MACLACHLAN, STEWART, AND CO.; SUTHERLAND AND KNOX.
GLASGOW: DAVID CHAMBERS.

1849.

DUBLIN :
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v. Dr. M'William's Remarks on Dr. King's "Report on the Fever at Boa Vista." Ordered, by the House of Commons, to be printed, 10th March, 1848.

vi. Return to an Address of the Honourable the House of Commons, for "Copy of the Letter of the Superintendent-General of Quarantine (Sir William Pym), to the Lords of the Privy Council, in Reply to Dr. King's Report upon the Boa Vista Fever, said to have been introduced into the Island by the 'Eclair' Steamer."

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2. Report on the District, Local, and private Lunatic Asylums in Ireland, 1848. With Appendices. Parliamentary Document. Dublin: Thom, 1849. Fol. pp. 32.

3. Obstetrics; the Science and the Art. By Charles Meigs, M. D., Professor of Midwifery and the Diseases of Women and Children, in the Jefferson Medical College, Philadelphia, &c.; with 121 illustrations. Philadelphia: Lea and Blanchard, 1849. 8vo. pp. 685.

4. First and Second Reports by the Committee of the Royal College of Physicians appointed to consider any Bills that may be brought into Parliament for the Improvement of the Health of Towns, and the Applicability of such Measures to Scotland. Edinburgh: Neill and Co., 1849. Pamphlet, pp. 18.

5. Practical Illustrations of the Treatment of the principal Varieties of Headache, by the local application of benumbing Cold; with Remarks on the remedial Anæsthetic Uses of Congelation in Diseases of the Skin, and Surgical Operations. By James Arnott, M. D., &c. Brighton: King, 1849. pp. 54.

6. Questions and Observations on Hygiene, recommended to the Consideration of Naval Medical Men; suggested to the Mind of the Author by the Approach of the Asiatic Cholera. By James Browne, M. D., London. London: Churchill, 1849. Pamphlet, pp. 64.

7. Annual Report of the Royal Edinburgh Asylum, for the Year 1848. Edinburgh: Morningside, 1849. Pamphlet, pp. 35.

8. Sequel to Outlines of Medical Proof. By Thomas Mayo, M. D., F. R. S., &c. London: Longmans, 1849. Pamphlet, pp. 41.

9. Report of the Transactions of the Dublin Sanitary Association, from the 4th June, 1848, to 30th April, 1849. Dublin: M'Glashan, 1849.

10. Hydrophobia curable by using Submersion. Dublin: Hodges and Smith, 1849. Pamphlet, pp. 39.

11. A House for Shakespere. A Proposition for the Consideration of the Nation. The second and concluding Paper, containing a Review of the reception of the first, and a few digressions. By William Wilson. London: Mitchell. Pamphlet, pp. 16.

12. The Marriages, Births, and Deaths, registered in the Divisions, Counties, and Districts of England. Pamphlet, pp. 56.

13. On the Extraction of Teeth, with an Account of a new and much less painful Mode of Operating. By Henry Gilbert, M. R. C. S. L., and Surgeon Dentist, &c. London: Renshaw, 1849. pp. 66.

14. A Physician's Holyday, or a Month in Switzerland in the Summer of 1848. By John Forbes, M. D., F. R. S., with a Map and Illustrations. London: Murray and Churchill, 1849. 12mo. pp. 520.

15. The Misapplication of Anæsthesia in Childbirth exemplified by Facts. By G. T. Gream, &c. London: Churchill, 1849. Pamphlet, pp. 71.

16. Journal of the Statistical Society of London, Vol. xii. Part II., May, 1849. London: Parker, 1849. pp. 188.

17. Principles of Scientific Botany, or Botany as an inductive Science. By Dr. J. M. Schleiden, Extraordinary Professor of Botany in the University of Jena. Translated by Edwin Lankester, M. D., F. R. S., F. L. S, &c. London: Longmans, 1849. 8vo. pp. 616.

18. A Guide to the Use of the Buxton Waters. By William Henry Robertson, M. D., &c. Fifth Edition. London: Churchill, 1849. pp. 32.

19. Lectures on Medical Missions, delivered at the Instance of the Edinburgh Medical Missionary Society. Edinburgh: Sutherland and Knox, 1849. 8vo. pp. 320.

20. A Practical Treatise on Morbus Coxarius, or Hip-joint Disease, &c., with Cases and Illustration. By William C. Hugman, Member of the Royal College of Surgeons, &c. London: Highley, 1849. 8vo. pp. 81.

21. An Account of the Origin, Spread, and Decline of the Epidemic Fevers of Sierra Leone: with Observations on Sir William Pym's Review of the Report on the Climate and Disease of the African Station. By Alexander Bryson, M. D., R. N. London: Renshaw, 1849. 8vo. pp. 174.

22. A practical Treatise on the Inflammation of the Uterus and its Appendages, and on Ulceration and Induration of the Neck of the Uterus. By James Henry Bennett, M. D., Member of the Royal College of Physicians, &c. &c. Second Edition. London: Churchill, 1849. 8vo.

23. Anæsthesia, or the Employment of Chloroform and Ether in Surgery, Midwifery, &c. By J. Y. Simpson, M. D., F. R. S. E., &c. Philadelphia: Lindsay and Blakiston, 1849. 8vo. pp. 248.

24. The Cyclopædia of Anatomy and Physiology. Edited by Robert B. Todd, M. D., F. R. S., &c. Part XXXVI. London: Longmans.

25. Reports on the Royal College of Chemistry, and Researches conducted in the Laboratories in the Years 1845–46–47. London: 1849. 8vo. pp. 269.

26. Examinations on the President and Examiners of the Royal College of Physicians of London, and of the Medical and Surgical Corporate Bodies of the United Kingdom; with an Analysis of the Evidence given before the Select Committee of the House of Commons, and Suggestions for an improved System of Medical Government. By Edward Crisp, M. D., M.R.C.S., L. A. C. London: Wilson, 1849. Pamphlet, pp. 57.

27. A Letter to the Right Hon. the Earl of Carlisle, First Commissioner of several Metropolitan Sanitary Commissions, &c., &c., on the Necessity of continuing Parliamentary Aid in Support of the Hospitals of Dublin. By John M'Donnell, M. D. Dublin: Gill, 1849. Pamphlet, pp. 16.

28. An Exposition of the Case of the Assistant Surgeons of the Royal Navy. By a Naval Medical Officer. Second Edition. London: Churchill, 1849. Pamphlet, pp. 28.

29. Official Documents relative to the Trials of Warburgh's Fever Tincture (Tinctura Warburgi) in Cases of Intermittent and other Fevers, instituted by Order of the Austrian Government. Translated from the German. London: Parker, Furnivall, and Parker, 1849. Pamphlet, pp. 87.

30. The Statistics of the Retreat, consisting of a Report and Tables, exhibiting the Experience of that Institution for the Insane, from its Establishment in 1726 to 1840. York: Linney, 1841. pp. 62.

31. Memoirs on the Ganglia and Nerves of the Uterus. By Robert Lee, M. D., F. R. S., Fellow of the Royal College of Physicians, London, &c. &c. With five Engravings. London: Churchill, 1849. pp. 35.

32. Practical Observations on the Diseases of the Uterus. By Robert Lee, M. D., F. R. S., &c., &c. The coloured Illustrations from original Drawings, by Mr. Perry. London: Churchill, 1849.

33. Surgical Anatomy. By Joseph Maclise, Surgeon. London: Churchill. Fasciculus III.

34. Pathology of the Human Eye. By John Dalrymple, F. R. C. S. London: Churchill, 1849. Fasciculus II.

35. Portraits of Diseases of the Skin. By Erasmus Wilson, F. R. S. London: Churchill. Fasciculus V.

36. A new Method of Treating Sterility by the Removal of Obstructions of the Fallopian Tubes. By W. Tyler Smith, M. D., &c. (Reprinted from the Lancet, being a Supplement to a Treatise on Parturition and Obstetrics.) London: Savill and Edwards, 1849. Tract, pp. 16.

37. Outlines of Botany. Part I. Printed for the Author, 1848. (Such is the curt title of a little Work in small octavo, of forty pages, with seven Plates, which we understand has been written by Dr. Mateer, Professor of Botany in Belfast, and printed by Bailliere.)

38. A Treatise on Epidemic Cholera. By J. Rutherford Russell, M. D., with an Appendix of Cases treated in the Edinburgh Homœopathic Dispensary, in 1848–49, and a Map, showing the Course of the Cholera from India to Britain. London: Bailliere, 1849. 8vo. pp. 353.

39. A Memorial to His Excellency the Lord Lieutenant, on the Subject of the Irish Medical Charities, from 750 Physicians and Surgeons in Ireland, with His Excellency's Reply. Dublin: Webb and Chapman, 1849. Pamphlet, pp. 16.

40. The three Kinds of Cod-Liver Oil comparatively considered, with Reference to their Chemical and Therapeutic Properties. By L. J. de Jongh, M. D., of the Hague. Translated from the German, with an Appendix and Cases, by Edward Carey, M. D. London: Taylor, Walton, and Maberly, 1849. 8vo. pp. 176.

41. The Treatment of Rheumatic Diseases by Lemon Juice, with illustrated Cases from Hospital Practice. By G. Owen Rees, M. D., F. R. S., &c. London: Longmans, 1849. Pamphlet, pp. 38.

42. A Remonstrance with the Lord Chief Baron, touching the Case Nottidge *versus* Ripley. By John Conolly, M. D., &c., F. R. C. S. L. London: Churchill, 1849. Pamphlet, pp. 16.

43. Some Account of the Life, Writings, and Character of the late James Cowles Prichard, M. D., F. R. S., M. R. I. A., &c. Being the Substance of a Memoir read at the Meeting of the Bath and Bristol Branch of the Provincial Medical and Surgical Association, in March, 1849. By John Addington Symonds, M. D., &c. Pamphlet, pp. 54. 1849.

44. Fruits and Farinacea the proper Food for Man; being an Attempt to prove from History, Anatomy, Physiology, and Chemistry, that the original, natural, and best Diet of Man is derived from the Vegetable Kingdom. By John Smith. Second Edition. London: Churchill, 1849. 8vo. pp. 341.

BOOKS AND PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. London: Highley. (Recd. No. for July, 1849.)

2. The Edinburgh Medical and Surgical Journal; exhibiting a concise View of the latest and most important Discoveries in Medicine, Surgery, and Pharmacy. Edinburgh: Black. (Recd. No. for July, 1849.)

3. Transactions of the Medical Society of London. London.

4. The Transactions of the Provincial Medical and Surgical Association. London: Churchill. (Recd. Vol. XVI. Part II.)

5. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co. (Not yet recd.)

6. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Edited by N. H. Ranking, M. D. London: Churchill. (Not yet recd.)

7. Guy's Hospital Reports. London: Highley.

8. The Pharmaceutical Journal and Transactions. London. Edited by Jacob Bell. (Recd. regularly.)

9. The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. Conducted by Sir David Brewster, Richard Taylor, Richard Phillips, and Sir Robert Kane. London: Taylor. (Recd. regularly.)

10. Monthly Journal of Medical Science, in which is incorporated The Northern Journal of Medical Science. Edinburgh: Sutherland and Knox. (Recd. regularly.)

11. The Athenæum—Journal of English and Foreign Literature, Science, &c. London. (Recd. regularly.)

12. London Medical Gazette, or Journal of Practical Medicine. London. (Recd. regularly.)

13. The Medical Times. London. (Recd. regularly.)

14. Provincial Medical and Surgical Journal. London. Edited by Robert Streeten, M. D. Worcester: Dighton and Co. (Recd. regularly.)

15. London Journal of Medicine, a Monthly Record of the Medical Sciences. London: Taylor, Waller, and Maberly. (Recd. No. for July, 1849.)

16. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D., Philadelphia. (Recd. No. for January, 1849.)

17. The Medical Examiner and Record of Medical Science. Edited by R. W. Houston, M. D. Philadelphia: Lindesay and Blackston. (Recd. Nos. up to April, 1849).

18. The New York Journal of Medicine and the Collateral Sciences. Edited by C. A. Lee, M.D. New York: Langley. (Recd. Nos. for 1848.)

19. The American Journal of Arts and Sciences; conducted by Professor Silliman, and E. Silliman, Jun., and J. D. Dana. New Haven. (Recd. all the Nos. for 1848.)

20. The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by J. Carson, M. D., and R. Bridges, M. D. Philadelphia: Merrishow and Thompson.

21. The American Journal of Insanity. Edited by the Officers of the New York State Lunatic Asylum, Utica. (Recd. No. for July, 1849.)

22. The British American Journal of Medical and Physical Science. Montreal. (Recd. regularly.)

23. The American Journal and Library of Dental Science. Published under the auspices of the American Society of Dental Surgeons. (Recd. regularly.)

24. Gazette Médicale de Paris. Paris. (Recd. regularly.)

25. Gazette Médico-Chirurgicale a Paris. Paris. (Recd. regularly.)

26. La Lancette Française, Gazette des Hôpitaux Civils et Militaires. Paris. (Recd. regularly).

27. Annales d'Oculistique, publieés par la Dr. Florent Cunier, Bruxelles. (Not yet recd.)

28. Journal de Chimie Medicale, de Pharmacie, de Toxicologie, et Revue de Nouvelles, scientifique, Nationales et Etrangers, &c. Paris.

29. Journal de Pharmacie et de Chimie, &c. Paris. (Recd. regularly.)

30. L'Union Medicale, Journal des entreles scientifiques de pratiques, Moraux et professionelles du Corps medicale. Paris. (Recd. regularly.)

31. Revue Médicale Française et Etranger, Journal des Progress de la Medicine Hippocratique. Par J. B. Cayol. Paris.

32. Revue Medico-Chirurgicale de Paris. (Recd. regularly.)

33. Annales d'Hygiéne Publique et de Medecine Legale. Paris: Bailliere.

34. Archives Général de Médécine; Journal Complementaire des Sciences Medicales. Paris. (Not yet recd.)

35. Bulletin de l'Academie Royale de Medecine. Paris: Bailliere. (Recd. regularly.)

36. Annales et Bulletin de la Societe de Medicine de Gand. (Recd. regularly.)

37. Annales de la Société de Mêdecine Pratique de la Province d'Anvers (établie a Willebroeck). Boom. (Recd. regularly.)

38. Bulletin des Travaux de la Société Médico-Pratique de Paris.

39. Zeitschrift für die Gesammte Medicin mit besonderer Rücksicht auf Hospitalpraxis und ausländische Literatur. Von Dr. F. W. Oppenheim. Hamburg.

40. Neue Notizen aus dem Gebiete der Natur und Heilkunde, gesammlt der mitgetheilt von D. L. F. Froriep und Dr. R. Froriep. Weimar.

41. Zeitschrift de K. K. Gesellschaft der Aerzte zu Wien—Redakteur Dr. Karl Haller. Wien. (Not yet recd.)

42. Zeitschrift für Rationnelle Medezin; Herausgegeben Von Dr. J. Henle und Dr. C. Pfeufer, Professoren der Medecin an der Universitat Zu Heidelberg. (Not yet recd.)

43. Medecinische Jahrbücher des Kaiserliche Königliche Oesterreichen Staats. Wien. (Recd. Nos. to January, 1849.)

44. Oesterreichesche medecinische Wochenschrift als Ergänzungsblatt der Medicinischen Jährbuch, &c. (Recd. Nos. to January, 1849.)

45. Journal für Chirurgie und Augenheilkunde herausgegeben von Dr. P. von Walther und Dr. T. A. von Ammon. Berlin. (Not yet recd.)

46. Virteljahrschrift für die praktische Heilkunde. Prag. Borrosch und Andiê. (Not yet recd.)

47. Bibliothek for Læger, Tredie Række. Udgivet af Direktionen for de classenske Literaturselskab. Redigeret af H. Selmer. Kjobenhavn. (Not yet recd.)

48. Norsk Magazin, for Lægevidenskaben, udgivet af Lægeforeningen Christiana. Redigeret af Faye, W. Boeck, Lund, Voss, A. W. Münster, Christiana, Feilberg, und Landmark.

49. Hygiea, Medecinsk och Pharmaceutisfi. Mánadt-Skrift, Tionde Bandet. Stockholm: Fritze. (Recd. Nos. to September, 1848.)

50. Gazetta Medica Lombarda. Diretta dal Prof. Panizza, formerly the Gazetta Medica di Milano. Milan. (Recd. regularly.)

NOTICES TO CORRESPONDENTS.

The great extent of the Fever Report, and the necessity for introducing a variety as well as a quantity of Original Matter, has induced us to defer the conclusion of that subject till the November Number. It will then be complete in the Numbers of the Journal for the Year 1849. Several Communications upon this important subject, received too late for insertion in their proper places, will be given in the form of an Appendix in the next Number.

Communications have been received from Dr. J. F. Duncan, and Mr. William Colles, of this city; Dr. Whittle, of Liverpool; Dr. Tuthill Massy, Exeter; Dr. Faussett, Ballina; and Dr. Trayor, Castlewood.

Our next Number will contain a Memoir of the late Richard Carmichael, Esq.

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   III. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D.

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1. Treatise on Cholera. By Nathaniel Alcock, A. B., M. B., Ex-Scholar of Trinity College, Dublin, Physician to Kilkenny Gaol, and Surgeon to the County Infirmary, &c. &c. London: Churchill, 1849. 8vo. pp. 189.

2. Proceedings of the Westminster Medical Society, Session 1848–9.

3. On the Ganglia and Nerves of the Heart. By Robert Lee, M. D., F. R. S., Fellow of the Royal College of Physicians, London. (From the Philosophical Transactions, Part I. for 1849.) London: Taylor, 1849.

4. The Harveian Oration, delivered before the Royal College of Physicians. By John Carr Badeley, M. D., Cantab., Fellow of the College. Pamphlet, 1849. pp. 20.

5. The History of the Cholera in Exeter, in 1832. By Thomas Shapton, M. D., Physician to the Devon and Exeter Hospital, &c. London: Churchill, 1849. 8vo. pp. 292.

6. A Dissertation upon Dislocations and Fractures of the Clavicle and Shoulder-Joint, being the Jacksonian Prize Essay for 1846. By Thomas Callaway, F. R. C. S., &c. London: Highley, 1849. 8vo. pp. 178.

7. On the Nature of Limbs; a Discourse delivered on Friday, February 9, at an Evening Meeting of the Royal Institution of Great Britain. By Richard Owen, F. R. S. London: Van Voorst, 1849. 8vo. pp. 119.

8. Practical Observations on the Prevention, Causes, and Treatment of Curvatures of the Spine, with Engravings and Woodcuts, illustrative of the Cases. By Samuel Hare, Surgeon. Third Edition, revised and enlarged. London: Churchill, 1849. 8vo. pp. 245.

9. First Principles of Medicine. By Archibald Billing, M. D., A. M., F. R. S., &c. &c. Fifth Edition, revised and improved. London: Highley, 1849. 8vo. pp. 332.

10. On Gout, its History, its Causes, and its Cure. By William Gairdner, M. D. London: Churchill, 1839. 12mo. pp. 232.

11. Researches on the Development, Structure, and Diseases of the Teeth. By Alexander Nasmyth, F. L. S., F. G. S., Member of the Royal College of Surgeons, London, &c. &c. London: Churchill, 1849. 8vo. pp. 230.

12. On Parthenogenesis, or the successive Production of Procreating Individuals from a single Ovum. A Discourse introductory to the Hunterian Lectures on Generation and Development, for the Year 1849, delivered at the Royal College of Surgeons of England. By Richard Owen, F. R. S., &c. London: Van Voorst, 1849. 12mo. pp. 76.

13. Osteological Contributions to the Natural History of the Chimpanzees (Troglodytes Geoffroy), including the Description of the Skull of a large Species (Troglodytes Gorilla, Savage), discovered by Thomas S. Savage, M. D., in the Gaboon Country, West Africa. By Professor Owen, F. R. S., F. Z. S., &c. 4to. pp. 18.

14. On the Develpoment and Homologies of the Carapace and Plastron of the Chelonian Reptiles. By Richard Owen, Esq., F. R. S., &c. (From the Philosophical Transactions, Part I., for 1849. London: Taylor, 1849. 4to.

15. Electricity as a Cause of Cholera or other Epidemics, and the Relation of Galvanism to the Action of Remedies. By Sir James Murray, M. D., T. C. D., Member of the Royal College of Surgeons, Edinburgh, Inspector of Anatomy, Merrion-square, Dublin, 1849. Dublin: Brown and Nolan, 1849. 12mo. pp. 160.

16. Mémoire sur l'Ophthalmie contagieuse qui régne dans la Classe pauvre et ouvriére. Par le Docteur Florent Cunier. Bruxelles et Leipzig: Muquardt, 1849. pp. 52.

17. De l'Emploi de l'Acétate de Plomb Neutre selon la Methode de M. Buys, dans le Traitement de quelque Affections Oculaires. Par le Docteur Florent Cunier. Bruxelles: de Mortier, 1849. pp. 29.

18. A Dictionary of Practical Medicine, comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, &c. &c. With numerous Prescriptions for the Medicines recommended, &c. By James Copland, M. D., F. R. S., Fellow of the Royal College of Physicians, &c. &c. London: Longmans. Part XIV.

19. Repertorium der Physik Eine Zusammenstellung der neueren, Fortschritte diesir Wissenchaft, Band VIII. Berlin: Verlag Von Veil und Comp. 1849. pp. 108.

20. Bolfsargneimittel und einfache nieht Pharmacentifch heilmittel gegen Krankheiten des Menschen Von. Dr. Joh. Fr. Ofiander. Tubigen Osiander Sche Buchhanddlung, 1844. Siede 669.

21. Rechtfertigung der Von den Gelehrten misskannten Verstandesrechten Erfahrungsheillehre der alten Scheideküngstigen Geheimärzte, und treue Mitheilung des Ergeibnisses einer 25 Jährigen Erprobung dieser Lepre am Krankenbette. Von Johann Gottfried Rademacher. Berlin: Druck und Verlag von G. Reimer, 1848. Erster Band. Siede 873. Sweiter Band, siede 809.

22. Brunnenarztliche Mittheilungen Uber die Wahl der Jahreszeit Beim Gebrauche der Karlsbader Mineralquellen. Von Dr. L. Pleckles. Siede 50.

23. Die Erkenntniss und Behandlung der Taubheit. Für Aerzte und gebildete Nichtärzte. Von Dr. W. Loewe, &c., &c. Mit Einer Steindrucktafel, Pasewalk, C. E. Braune, 1849. Sede 66.

24. Practisches Handbuch der Augenheilkunde, zum Gebrauche für Aerzte und Studierende. Von Otto Werdmüller Arzt in Uster, Canton Zürich. Zurich: Druck und Verlag Von Orell, Füssli und Comp. 1849. Siede 244.

25. Svenska Läkare-Sällskapets Nya Handlingar. Sjette Bandet. Stockholm: Tryckte Hos. P. G. Berg, 1848. Siede 398.

26. Encyklopädie der gesammten Volksmedicin oder Lexikon der Vorzüglichsten und Wirksamsten Haus und Volksarneimittel aller Länder, Von Georg Friedrich Most. Leipzig: Brockhaus, 1843.

27. On the Mode of Communication of Cholera. By John Snow, M. D. London: Churchill, 1849. Pamphlet, pp. 31.

28. The Cholera considered Physiologically. By Forbes Winslow, M. D. London: Churchill, 1849. Pamphlet, pp. 15.

29. System der Chirurgie Von Ph. Fr. v. Walther, &c. &c. Vierter Band 1. Acbtheilung: Freiburg im Breisgau. Herder sche Verlagsbuchhandlung, 1848. Siede 248.

30. Cholera, an Analysis of its Epidemic, Endemic, and Contagious Character; with original and peculiar Views of its Mode of Propagation, and the Means of counteracting it. Showing also, by analogy, that the Means of preserving organized Bodies from Decay point to the only true curative Principles in the Treatment of Fever generally, and more especially Cholera. By Henry Stephens, Member of the Royal College of Surgeons, London. London: Renshaw, 1849. Pamphlet, pp. 47.

31. Surgical Anatomy. By Joseph Maclise, Surgeon. London: Churchill. Fasciculus IV.

32. Pathology of the Human Eye. By John Dalrymple, F. R. C. S. London: Churchill, 1849. Fasciculus III.

33. The Cyclopædia of Anatomy and Physiology. Edited by Robert B. Todd, M. D., F. R. S., &c. Part XXXVII. London: Longmans.

34. Portraits of Diseases of the Skin. By Erasmus Wilson, F. R. S. London: Churchill. Fasciculus VI.

35. Malignant Cholera; its Mode of Propagation and its Prevention. By William Budd, M. D., Physician to the Bristol Infirmary. London: Churchill, 1849. Pamphlet, pp. 30.

36. Cholera; an Inquiry Physiological, and Pathological, into its proximate Cause. By Protheroe Smith, M. D. Second Edition. London: Bailliere, 1849. Pamphlet, pp. 40.

37. The Transactions of the American Medical Association, instituted 1847. Vol. I. Philadelphia, 1848. 8vo. pp. 400.

38. An Essay on Ringworm, with Plates, drawn from Nature, illustrative of the Disease cured by a Medicated Soap without the Use of Mercury; likewise on some Forms of Ophthalmia connected therewith, and a few concluding Hints on those Subjects to Parents, and Managing Committees of Public Charitable Institutions. By Andrew Paul, B. A., Surgeon, &c. Second Edition. Oxford: Parker and Slatter. 4to. pp. 18.

39. The Physiognomy of Diseases. By George Corfe, M. D., &c. London: Nisbet, 1849. 4to. pp. 151.

40. Lectures on Electricity and Galvanism, in their Physiological and Therapeutical Relations, &c. By Golding Bird, M. D., &c. London, 1849. Small 8vo. pp. 212.

41. Handbuch der Pathologie und Therapie. Von Dr. C. A. Wunderlich. In drei bänden. Struttgart: Ebner und Senbeel, 1848. (Received three Parts.)

BOOKS AND PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. London: Highley. (Recd. No. for October, 1849.)

2. The Edinburgh Medical and Surgical Journal; exhibiting a concise View of the latest and most important Discoveries in Medicine, Surgery, and Pharmacy. Edinburgh: Black. (Recd. No. for October, 1849.)

3. Transactions of the Medical Society of London. London.

4. The Transactions of the Provincial Medical and Surgical Association. London: Churchill.

5. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co. (Recd. Vol. for August.)

6. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Edited by N. H. Ranking, M. D. London: Churchill. (Not yet recd.)

7. Guy's Hospital Reports. London: Highley. (Recd. Vol. VI. Part II.)

8. The Pharmaceutical Journal and Transactions. London. Edited by Jacob Bell. (Recd. regularly.)

9. The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. Conducted by Sir David Brewster, Richard Taylor, Richard Phillips, and Sir Robert Kane. London: Taylor. (Recd. regularly.)

10. Monthly Journal of Medical Science, in which is incorporated The Northern Journal of Medical Science. Edinburgh: Sutherland and Knox. (Recd. regularly.)

11. The Athenæum—Journal of English and Foreign Literature, Science, &c. London. (Recd. regularly.)

12. London Medical Gazette, or Journal of Practical Medicine. London. (Recd. regularly.)

13. The Medical Times. London. (Recd. regularly.)

14. Provincial Medical and Surgical Journal. London. Edited by Robert Streeten, M. D. Worcester: Dighton and Co. (Recd. regularly.)

15. London Journal of Medicine, a Monthly Record of the Medical Sciences. London: Taylor, Waller, and Maberly. (Recd. regularly.)

16. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D., Philadelphia. (Recd. No. for April, 1849.)

17. The Medical Examiner and Record of Medical Science. Edited by F. G. Smith, M. D., and D. H. Tucker, M. D. Philadelphia: Lindesay and Blackston. (Recd. Nos. up to April, 1849.)

18. The New York Journal of Medicine and the Collateral Sciences. Edited by C. A. Lee, M.D. New York: Langley. (Recd. No. for July, 1849.)

19. The American Journal of Arts and Sciences; conducted by Professor Silliman, and E. Silliman, Jun., and J. D. Dana. New Haven. (Recd. all the Nos. for 1848.)

20. The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by J. Carson, M. D., and R. Bridges, M. D. Philadelphia: Merrishow and Thompson.

21. The American Journal of Insanity. Edited by the Officers of the New York State Lunatic Asylum, Utica. (Recd. No. for July, 1849.)

22. The British American Journal of Medical and Physical Science. Montreal. (Recd. regularly.)

23. The American Journal and Library of Dental Science. Published under the auspices of the American Society of Dental Surgeons. (Recd. for January, 1849.)

24. The Boston Medical and Surgical Journal. Edited by J. V. C. Smith, M. D. Boston: Clapp. (Recd. No. for September, 1849.)

25. Gazette Médicale de Paris. Paris. (Recd. regularly.)

26. Gazette Médico-Chirurgicale a Paris. Paris. (Recd. regularly.)

27. La Lancette Française, Gazette des Hôpitaux Civils et Militaires. Paris. (Recd. regularly.)

28. Annales d'Oculistique, publieéspar la Dr. Florent Cunier, Bruxelles. (Recd. No. for July, 1849.)

29. Journal de Chimic Medicale, de Pharmacie, de Toxicologie, et Revue de Nouvelles, scientifique, Nationales et Etrangers, &c. Paris.

30. Journal de Pharmacie et de Chimie, &c. Paris. (Recd. regularly.)

31. L'Union Medicale, Journal des entreles scientifiques de pratiques, Moraux et professionelles du Corps medicale. Paris. (Recd. regularly.)

32. Revue Médicale Française et Etranger, Journal des Progress de la Medicine Hippocratique. Par J. B. Cayol. Paris. (Recd. all Nos. for 1849.)

33. Revue Medico-Chirurgicale de Paris. (Recd. regularly.)

34. Annales d'Hygiéne Publique et de Medecine Legale. Paris: Bailliere.

35. Archives Général de Médécine; Journal Complementaire des Sciences Medicales. Paris. (Not yet recd.)

36. Bulletin de l'Academie Royale de Medecine. Paris: Bailliere. (Recd. regularly.)

37. Annales et Bulletin de la Societe de Medicine de Gand. (Recd. regularly.)

38. Annales de la Société de Médecine Pratique de la Province d'Anvers (établie a Willebroeck). Boom. (Recd. regularly.)

39. Bulletin des Travaux de la Société Médico-Pratique de Paris.

40. Zeitschrift fiir die Gesammte Medicin mit besonderer Riicksicht auf Hospitalpraxis und ausländische Literatur. Von Dr. F. W. Oppenheim. Hamburg. (Recd. Nos. perfect to May, 1849.)

41. Neue Notizen aus dem Gebiete der Natur und Heilkunde, gesammlt der mitgetheilt von D. L. F. Froriep und Dr. R. Froriep. Weimar. (Recd. all to June, 1849.)

42. Zeitschrift de K. K. Gesellschaft der Aerzte zu Wien—Redakteur Dr. Karl Haller. Wien. (Not yet recd.)

43. Zeitschrift für Rationnelle Medizin; Herausgegeben Von Dr. J. Henle und Dr. C. Pfeufer, Professoren der Medizin an der Universität Zu Heidelberg. (Recd. Band VII. Hef. i. ii. iii.)

44. Medecinische Jahrbücher des Kaiserliche Königliche Oesterreichen Staats. Wien. (Recd. Nos. to January, 1849.)

45. Oesterreichesche medecinische Wochenschrift als Ergänzungsblatt der Medicinischen Jährbuch, &c. (Recd. Nos. to January, 1849.)

46. Journal für Chirurgie und Augenheilkunde herausgegeben von Dr. P. von Walther und Dr. T. A. von Ammon. Berlin. (Not yet recd.)

47. Virteljahrschrift für die praktische Heilkunde. Prag. Borrosch und Andrê. (Recd. VI. Jahrgaug. Ist and 2nd Band, 1849.)

48. Forum fur Medicenal Augelegenheiten. Prag. Borrosch und Andrê. (Recd. Nos. to January, 1849.)

49. Bibliothek for Læger, Tredie Række. Udgivet af Direktionen for de classenske Literaturselskab. Redigeret af H. Selmer. Kjobenhavn. (Not yet recd.)

50. Norsk Magazin, for Lægevidenskaben, udgivet af Lægeforeningen Christiana. Redigeret af Faye, W. Boeck, Lund, Voss, A. W. Münster, Christiana, Feilberg, und Landmark.

51. Hygiea, Medecinsk och Pharmaceutisfi Mánadt-Skrift, Tionde Bandet. Stockholm: Fritze. (Recd. Nos. to March, 1849.)

52. Gazetta Medica Lombarda. Diretta dal Prof. Panizza, formerly the Gazetta Medica di Milano. Milan.

UNIVERSITY OF DUBLIN.

The degree of M. B. was conferred on the following Gentlemen at the Spring and Summer Commencements in the year 1849.

Robert Bernard.
William Crofton.
Thomas D. Hargrave.
John King McConchy.
Edmund W. Davy.
W. F. Mac Clinton.
Armstrong Todd.
John Casement.
Francis Holton.
Maurice F. Collis.
Lombe Atthill.
John Dill.
Jones Lamprey.
James Carroll.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

List of Gentlemen who obtained the Letters Testimonial of the College since the 26th October, 1848.

John Warnock.
Charles T. Huston.
John H. Jephson.
Fitzmeade Dennis.
Francis E. Little.
John Wallace.
Thomas Moyles.
Robert Galbraith.
Henry Percy.
Charles W. Woodroffe.
Philip O'Reilly.
Joseph Lawson.
Samuel Chaplin.
Robert D. Lyons.
Thomas Wilkinson.
Isaac A. D'Olier.
Richard P. Williams.
Thomas Morgan.
John Macartney.
William Temple.
Mark Moore.
Benjamin Tydd.
William Booker.
William G. Clarke.
Timothy D. M'Carthy.
James Davys.
Henry Bentley.
Christopher Flood.
Francis Robinson.
Henry Kavanagh.
William Richardson.
Edward K. Atkin.
George Caldwell.
John Jones.
John Dill.
Thomas W. Sproulle.
James M. Stark.
John M'Munn.
Timothy T. Haran.
William J. Barbour.

APOTHECARIES' HALL.

List of Gentlemen who obtained the License from the Apothecaries' Hall of Dublin since 13th October, 1849.

John Sillery Morrison.
Hugh M'Cann.
John Forster Newland.
Robert B. Kidd.
Robert Wall.
Joseph Largan.
Patrick Brady.
Richard O'Keeffe.
William Middleton.
Michael Reidy.
John Craven Nicholls.
Thomas O'K. Gordon.
John Graham.
Henry Meyler.
William J. M'Niece.
John H. Jephson.
Daniel Dwyer.
James M. Darrac.
James Carroll.
James Daly.
Robert B. M'Clelland.

NOTICES TO CORRESPONDENTS.

THE Fever Report has been concluded in the present Number; the Summary and Tabular Arrangements will be published with a separate issue of the entire Report.

Our next Number will contain a Portrait, together with the promised Memoir of the late Mr. Carmichael.

A Portrait of Sir Thomas Molyneaux has also been engraved, and will be published in the continuation of our Memoirs of Illustrious Physicians and Surgeons practising in Ireland.

Dr. Lees has kindly furnished us with the Lithograph which accompanies his Paper.

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THE DUBLIN

QUARTERLY JOURNAL

OF

MEDICAL SCIENCE.

AUGUST 1, 1849.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Report upon the recent Epidemic Fever in Ireland.*

(*Continued from vol. VII., page* 404.)

LEINSTER.

First Class of Queries.—The Outbreak and Antecedents of the Epidemic.

Carlow.—In this county the epidemic prevailed very generally. Previous to its outbreak, the health of the district was good, "as much so as at any time for the last eight years"(*a*). The fever broke out in March, 1847. Nothing remarkable as regards their state of health previously was noticed in those who were attacked. All classes in society, except the very highest, were affected, but the poor chiefly. In the town of Carlow the disease was not noticed as setting in often after recovery from the effects of want of food(*b*); but in the country districts it seems to have often set in after starvation. Scurvy or purpura did not

(*a*) Dr. Roche, Bagnalstown.

(*b*) Dr. Connor.

precede the epidemic. An epizootic disease prevailed amongst cattle the year previously. The greatest number attacked were under fifty years of age. Females were more liable to be affected than males, but Dr. Connor remarks that the disease was less fatal to them. During the year 1847, there were admitted 714 patients into the Carlow Fever Hospital(*a*).

Kilkenny.—The disease was very prevalent in this county. The state of health of the district was under the average previously to the outbreak of the epidemic. In the neighbourhood of Castlecomer it commenced in April, 1847(*b*). Those attacked were previously in a bad state of health. The labouring classes and small farmers in the country districts, and the lower order in towns, were chiefly affected, but the disease was not noticed to have set in generally after recovery from the effects of starvation. In some cases it was preceded by scurvy or purpura, the latter of which was present as a prominent symptom in the greater number of cases(*c*). An epidemic was prevalent amongst horned cattle previously, and at the same time. Adults were principally attacked, and "males were more liable to the disease than females. The proportion of the cases to the population of the district was about 1 in 27"(*b*).

King's County.—Dysentery, diarrhœa, and dropsy, were very prevalent in this county previously to the breaking out of the epidemic, which was very prevalent, having commenced in April, 1847(*d*). All classes in society suffered, chiefly the poor, but the higher classes also in the ratio of their numbers(*e*). The disease very generally set in after recovery from the effects of starvation, but it was not preceded by scurvy or purpura. An epidemic prevailed amongst cattle at the same time as the epidemic of fever, "and is now (September, 1848) more general than during the past year"(*f*). All ages were liable to the disease; and females more than males, in the proportion of about 2 to 1.

(*a*) Dr. Connor. (*b*) Dr. Ross. (*c*) Dr. Lalor, Kilkenny.
(*d*) Dr. Cheevers, Kinnetty. (*e*) Dr. Bird, Banagher. (*f*) Dr. Cheevers.

Queen's County.—The health of the district was bad previously to the epidemic, which commenced in May, 1847. Those attacked were generally in a weak state, the digestive organs being especially affected, as evidenced by diarrhœa. The poorer classes chiefly suffered from the disease, which very often set in after recovery from the effects of starvation, but was in few instances preceded by purpura or scurvy. An epizootic prevailed amongst pigs and horned cattle. Those persons attacked were principally between the ages of 16 and 60; the proportion of females was in general somewhat more than that of males. "The population of the district of the Ballinakill Dispensary was about 6000; during the active prevalence of the epidemic, from 1st of May to 1st of November, 1847, 420 cases were treated; of these 122 were females and 198 males"(*a*).

Dublin.—The late epidemic of fever was remarkably prevalent in both the city and county. The lower orders of the population suffered much from scurvy for many months previously(*b*); in other respects the general health had been good; acute diseases had not prevailed much, and the mortality was somewhat below par. Fever first began to be very prevalent in the month of February, 1847; yet cases were noticed to have occurred in the latter end of 1846 in a greater proportion than usual. Those first attacked were individuals who had been much reduced by bad diet or insufficiency of food, and throughout the continuance of the epidemic the lower classes were chiefly affected. In many cases the fever set in immediately after recovery from the effects of starvation; and although scurvy preceded the disease, neither it nor purpura was noticed to have often occurred as a concomitant symptom. Dr. Battersby remarks that the latter was present in some cases under his care. An epizootic disease prevailed amongst cattle

(*a*) Dr. Walshe.

(*b*) See Dr. Curran's essay, Dublin Quarterly Journal, vol. iv. p. 83.

throughout the county. Young persons seem to have been particularly liable to be attacked with the fever. Dr. Minchin remarks that, in his experience, the greatest number of cases occurred between the ages of 10 and 20; Dr. Wyse says from 15 to 40. It is doubtful whether males or females were more liable to the disease.

Wicklow.—The epidemic commenced in this county in the beginning of 1847; in the spring of which year it prevailed very extensively. Previously to its breaking out the health of the population was not good. "Bowel complaints had been prevalent for some time"(*a*). The poorest classes were chiefly affected. Those whose constitutions were broken down, or health deteriorated, from any cause, were most liable to the disease. Fever did not seem to have set in after recovery from the effects of starvation. Dr. Nolan of Wicklow states, indeed, that the people in his district did not suffer from a state amounting to starvation; and Dr. Darby mentions that those who suffered most severely from want of food were more subject to dysentery than to fever. Scurvy or purpura did not precede the disease, but Dr. Nolan saw more cases of purpura than in previous years. The ordinary distemper prevailed amongst cattle for many months before the outbreak of the fever, and was also prevalent in this county during the summer of 1848, after the cessation of the fever epidemic. Young persons were most liable to the disease. In the county of Wicklow fever hospital, during the year 1848, 229 males and 176 females were admitted; of these 199 were under the age of 20; 150 between 20 and 40; forty-four between 40 and 60; and twelve over 60.

Louth.—The epidemic commenced in this county in May, 1847, after which time it was very prevalent. The state of the health of the district was very bad previously; dysentery, "or

(*a*) Dr. Darby, Bray.

rather passive hemorrhage from the bowels"(*a*), having prevailed for several months. Most of those attacked "had suffered from want and privations of various kinds"(*b*), or "had experienced a total change of food"(*a*). The very poorest classes in society were those chiefly attacked, and the disease often set in after recovery from a bad state of health, produced by the want of a sufficiency of food. The fever was not preceded by either scurvy or purpura. No disease was prevalent amongst cattle immediately before the outbreak of the epidemic. Young persons were chiefly attacked, the greater number of cases occurring between the ages of 7 and 40. Males were not more liable to the disease than females. The proportion of cases to the population of the district was, according to Dr. Browne's report, about 1 to 15.

Westmeath.—The population of this county had suffered very much from various diseases, especially dysentery and dropsical swellings of the extremities, previously to the breaking out of the epidemic, which was very prevalent. In Moate(*c*) it commenced in 1847, but in other parts of the county, as in Castletowndelvin, it did not begin until July of the same year. The greater number of those attacked were previously in bad health. All classes were affected, but the poor chiefly, and the disease very frequently set in after recovery from the effects of starvation. "The fever was frequently preceded by scurvy and purpura"(*d*), but Dr. Bewley states that such was not the case in his district, and that purpura was extremely rare. There was no disease of cattle prevalent at the same time as or previously to the epidemic of fever. All ages and both sexes were equally liable to the disease. According to Dr. Bewley, the proportion of cases to the population of the district was about 1 in 10.

Meath.—In different parts of this county the epidemic broke

(*a*) Dr. Stronge, Ravensdale.
(*b*) Dr. Browne, Dundalk.
(*c*) Dr. Bewley, Moate.
(*d*) Dr. Williams, Castletowndelvin.

out at various periods; in Trim it commenced in January, 1847(*a*); in Kells in May(*b*); and in Navan in June of the same year(*c*). It was very prevalent generally, the health of the people previously having been much as usual, except at Trim, where dysentery had prevailed. The poorer classes were chiefly affected, and the disease frequently set in after recovery from the effects of starvation. An epidemic was prevalent amongst cattle previously to the outbreak. Most of those attacked were young persons; males were not more liable to the disease than females. The population of Dr. Pentland's district was 43,000, and the number admitted into hospital 1900.

Longford.—The epidemic of fever was very prevalent in this county; the health of the population had been previously good, with the exception of dysentery, which was prevalent in some of the country districts. It commenced in May, 1847, and attacked all classes, "principally the poor"(*d*), "first the lower class and afterwards the better"(*e*). The disease often set in after a recovery from starvation, but Dr. Daly remarks that he does not think there was any further connexion between the epidemic and famine, except that persons weakened by want of food were in a bad condition to resist disease. The fever was not preceded by either purpura or scurvy. There was great mortality amongst horned cattle previously to the outbreak of the epidemic. Young persons were chiefly attacked, from 15 to 30(*e*), and under 20(*d*). In the temporary fever hospital at Granard, from the 2nd August, 1847, to the 23rd September, 1848, 671 patients were admitted; of these 285 were males, and 386 females; 394 were under twenty years of age; 193 from 20 to 40; seventy-four from 40 to 60, and ten above 60. In Dr. Harris's experience, out of every twelve who were attacked, nine were males, and the proportion of cases to the population of his dictrict was about 1 in 60.

(*a*) Dr. Wallace. (*b*) Dr. Pentland. (*c*) Dr. Nicolls.
(*d*) Dr. Daly, Granard. (*e*) Dr. Harris, Drumlish.

The only return which we have received from the county of Wexford, is the report of Dr. Boxwell, and from Kildare that of Dr. Faulkner, for both of which the reader is referred to the provincial summary of reports.

Second Class of Queries.—The Character and Symptoms of the Disease.

Carlow.—The different reports from this county agree as to the fact of the late epidemic having afforded abundant evidence of the disease being contagious. No difference is noticed in the symptoms of cases occurring in different classes of society. Where the fever followed starvation it was of a very low character, "with much greater irritability of the gastro-intestinal mucous membrane than usual"(*a*). It differed from former epidemics, especially in a tendency to relapse. In Dr. Connor's experience purpuric spots and miliary eruptions were frequent, but they were not very common in the cases attended by Dr. Roche. The latter physician also observed crisis very frequently, diaphoresis and rigors being the most usual critical phenomena.

Kilkenny.—The disease was in this county undoubtedly contagious. Dysentery formed the essential difference in those cases which followed starvation, typhoid symptoms setting in in the latter stage and in the relapse. The epidemic differed from former outbreaks of fever in the almost invariable tendency to relapse(*b*), and in the frequency of purpuric spots(*c*); the latter were not witnessed by Dr. Ross, except in the last stages of protracted cases. This physician remarks that crisis was not common in his experience.

For a special account of the purpuric fever in the city of Kilkenny we refer our readers to Dr. Lalor's paper in the fifth volume of this Journal.

King's County.—The disease was manifestly contagious. In

(*a*) Dr. Roche. (*b*) Dr. Ross. (*c*) Dr. Lalor.

the higher classes of society "it assumed more generally a typhoid type, and the mortality was much greater than in the lower"(*a*). Dysentery and diarrhœa were more frequent in the cases following starvation. The fever differed from former epidemics chiefly in its duration and the liability to relapse. Purpuric spots were not often noticed. Crisis was infrequent; when it occurred it was marked generally by profuse diaphoresis.

Queen's County.—Sufficient proofs were afforded of the disease being contagious. "Extreme depression of the vital powers was the leading characteristic of the fever amongst the poor; and in the better classes congestion of one or more of the internal organs, particularly the brain"(*b*). Those cases which followed starvation were especially marked by irritability of the digestive organs and a tendency to relapse. "Typhoid symptoms generally occurred, in cases of fever following starvation, about the fifth or seventh day, but often in the very commencement"(*b*). The fever differed from former epidemics in the tendency to relapse, "and in the excessive irritability of the digestive organs"(*b*). Purpuric spots were rather frequent, and crisis was frequently noticed; the usual critical phenomena being profuse secretion of transparent urine and profuse diaphoresis.

Dublin.—In both city and county nearly all the reports concur in stating that abundant evidence was afforded of the disease being contagious. Dr. Battersby states that in the temporary fever hospital to which he was attached a large number of the nurses contracted fever, many of whom were under his care; some of them were affected more than once. In the higher classes the disease was especially marked by the early occurrence of head symptoms and typhoid prostration. "Among the poor the symptoms were always quite manageable, and the good effect of remedies in most cases was at once apparent"(*c*).

(*a*) Dr. Cheevers. (*b*) Dr. Walshe. (*c*) Dr. Minchin.

In the cases which followed starvation Dr. Wyse observes that the symptoms were not so prominent, and the stages not so well marked. He also observed, that in these cases the typhoid symptoms followed the starvation state from the sixth to the twelfth day. The very general tendency to relapse especially characterized the last epidemic. Purpuric spots were commonly noticed. In the north city fever sheds crisis was not common, but when it occurred it was well marked, most usually by profuse perspiration, epistaxis, or diarrhœa. Dr. Battersby observed it frequently and marked by sweating.

Wicklow.—Various proofs of the contagious character of the fever are afforded by the reports from this county, but Dr. Darby of Bray states that from the opportunities he has had, he has formed the opinion that the disease is not contagious. In the higher orders the head was principally engaged. The chief difference noticed between this fever and former epidemics was its assuming a more typhoid character, ascribed by Dr. Nolan to the debilitated state of the individuals affected. Purpuric spots were not noticed by Dr. Darby or Dr. Boswell, but Dr. Nolan states that dark measly spots were almost constant. In Bray, crisis was almost invariably present, usually by sweating, occasionally by diarrhœa(*a*). In Wicklow it was not common; when it did occur the phenomena were diarrhœa and urinary deposits.

Louth.—Fever was reported to have been here manifestly contagious. In those cases which followed starvation the relapses were more frequent, and the recovery slower, requiring stimulants at an early period; and dysentery almost always following as one of the sequelæ. The frequency of relapse was the chief characteristic of the late epidemic. Purpuric spots were not common; they were noticed by Dr. Strong occasionally when the fever was accompanied by diarrhœa. When crisis occurred the most usual critical phenomenon was profuse sweating.

(*a*) Dr. Darby.

Westmeath.—The fever was here unquestionably contagious. In the higher classes it was marked by typhoid symptoms; in the lower it was of a much milder type. Dysenteric symptoms generally occurred in those cases which followed starvation. Purpuric spots were frequently observed by Dr. Williams, but not often by Dr. Bewley. When crisis occurred, which it did very generally in Dr. Bewley's practice, profuse perspiration was the most usual critical phenomenon.

Meath.—In this county most of the reports afford evidence of the disease having been contagious, but Dr. Wallace of Trim did not observe that it was so: in the Navan temporary fever hospital all the nurses had fever(*a*). Typhoid symptoms were more marked in the higher orders. In those cases which followed starvation the disease was of longer duration, and the recovery was slower. Dr. Pentland witnessed several cases in which starvation produced dysentery, terminating in fever. Frequency of relapse especially characterized the epidemic. Purpuric spots occurred in about 25 per cent. of the cases. Crisis, by diaphoresis, was generally noticed.

Longford.—Numerous proofs of contagion are reported from this county. In Granard four of the nurses and the physician were attacked with fever(*b*). Head symptoms were generally present in the higher classes, and the type of the disease was lower. Dr. Harris mentions that the fever was of a milder character in those cases which followed starvation, and that the typhoid symptoms usually set in from the ninth to the twelfth day. Tendency to relapse principally characterized the epidemic. Purpuric spots were not common. When crisis occurred it was marked by sweating and epistaxis.

Third Class of Queries.—Complications.

Carlow.—Dysentery in most cases accompanied the fever, but still more generally followed it. Affections of the digestive

(*a*) Dr. Nicolls. (*b*) Dr. Daly.

organs were the most frequent complications. Relapses were exceedingly common, indeed "occurred so frequently as to be the rule."(*a*) In relapsed cases the type of the fever was much lower, the character of the fever more grave, and the duration longer, than in those in which relapses did not occur; and both Dr. Roche and Dr. Connor noticed the occurrence of petechiæ in relapse when it did not occur in the primary fever. No notice was taken of any morbid phenomena of the heart being present. Epistaxis was frequent at all stages, especially in persons about the age of puberty. Enlargement of the spleen was not noticed in any case. Bed-sores were infrequent.

Kilkenny.—Dysentery preceded and accompanied the fever. In Dr. Ross's practice the most usual local complications were those of the chest and the digestive organs. Relapses occurred in almost every case. Relapsed cases were more protracted, according to some returns, "always more so"(*b*), than the primary. The condition of the heart was not observed. Epistaxis was frequent in the latter stages. The spleen was noticed by Dr. Ross to have been enlarged. Bed-sores were not common.

King's County.—Dysentery preceded fever in many cases, "and either accompanied or followed it in almost all"(*c*). The most frequent local complications were those of the chest. Relapses were remarkably frequent, the relapsed cases being more severe, and convalescence more tedious. Petechiæ in some cases appeared in the relapse when they did not occur in the primary fever. Epistaxis was frequent in all stages. "No enlargement of the spleen was noticed, but pain and tenderness on pressure over it were frequent during convalescence"(*c*). Bed-sores were not common.

Queen's County.—Dysentery occurred in all stages of the fever, and both preceded and followed it. The most frequent local complications were those of the digestive organs, but in

(*a*) Dr. Connor. (*b*) Dr. Ross. (*c*) Dr. Cheevers.

some cases the nervous and respiratory systems were also engaged. Relapses occurred in almost all cases; the relapsed cases being usually more severe in character, and followed by a more protracted convalescence. Petechiæ rarely appeared in relapsed cases; "there were but few instances of relapse occurring in regular petechial fever"(*a*). Epistaxis was frequent, usually occurring about the end of the first week. Dr. Walshe observed that, in some persons who had suffered from repeated relapses, the spleen became enlarged, and this enlargement was sometimes followed by general anasarca. Bed-sores seldom occurred.

Dublin.—The fever was accompanied in a great number of cases by dysentery. It was a common sequela, but did not so frequently precede the disease. Derangements of the digestive organs were the most frequent local complications; affections of the chest were also common. Relapses were extremely frequent. In these cases, as noticed by Drs. Battersby and Wyse, the primary fever was usually slight and quick in its course; and the former physician remarks, that the secondary fever was attended with vomiting. Petechiæ were not noticed in the relapse, when they did not occur in the primary fever. Dr. Minchin reports that he observed, in several cases, a "diffused softness of the first sound, a want of definedness." Enlargement of the spleen was often observed; Dr. Battersby observed it generally in relapsed cases. Dr. Wyse states his opinion, "that the spleen was very often seriously engaged in this epidemic." Bed-sores were very rare, according to some observers; but Dr. Wyse states that in the temporary fever hospital, at the north side of the city, sloughing bed-sores were very frequent.

Wicklow.—Dysentery was frequently observed as an accompaniment of the fever, and also after it had subsided, except in Newtown-Mount-Kennedy(*b*). The most frequent local compli-

(*a*) Dr. Walshe. (*b*) Dr. Boswell.

cations were those of the chest; but, during the hot months of summer, the digestive organs were chiefly engaged, "when jaundice, if not yellow fever, occurred in several instances"(*a*). Relapses were very frequent, except in Dr. Boswell's district. In relapsed cases the symptoms of the primary fever were generally mild, and the disease shorter. Petechiæ were noticed by Dr. Nolan in relapse, when they did not appear in the primary fever. Epistaxis was not common; but Dr. Darby reports that, in his experience, it occurred very commonly about the fifth day, where the head was much engaged. No enlargement of the spleen was observed, and bed-sores were not frequent.

Louth.—The fever was frequently accompanied and followed by dysentery. "We had first dysentery, then dysentery and fever (in the latter purpuric spots were sometimes present), and then fever alone"(*b*). The most frequent local complications were those of the digestive organs; the head was also often engaged. Relapses were most frequent, coming on generally about the fourteenth day(*c*); debility and gastric symptoms were the most general characteristics of the relapsed cases; petechiæ very rarely occurred when they were not present in the primary cases. No morbid phenomena of the heart were noticed: Dr. Stronge most truly observes, that it was no easy matter to examine the state of the heart in persons attacked with fever, where five or six were lying together on the same "wad of straw." Epistaxis was frequent, generally at the commencement of the disease. No enlargement of the spleen was observed, and bed-sores occurred but in very few cases.

Westmeath.—Dysentery more frequently preceded the fever, but was observed at all stages. Derangements of the digestive organs were the most usual local complications; next those of the respiratory organs, and the least frequently noticed were

(*a*) Dr. Nolan. (*b*) Dr. Stronge. (*c*) Dr. Browne.

those of the head; but Dr. Bewley states that he does not recollect an epidemic in which there were fewer local complications. Relapses occurred in almost every case; "very frequently in the five-day fever, and I have known some cases in which there were four or five relapses at irregular intervals"(*a*). Dr. Williams observed that petechiæ appeared in relapse, when they did not occur in the primary fever. The action of the heart was noticed to have been confused and indistinct in the strictly typhoid cases, "one of the sounds being often inaudible"(*a*). When epistaxis occurred it was usually in the latter stage; enlargement of the spleen was not observed, and bed-sores were very infrequent.

Meath.—Though dysentery sometimes preceded the fever, it most generally followed it. The most usual local complications were those of the digestive organs, and next in frequency the lungs were engaged. Relapses were exceedingly frequent; "often occurring thrice in the same individual"(*b*). In this county but little difference was noticed between the primary and relapsed cases. Petechiæ did not occur in the relapse when they were not present in the primary fever. No morbid phenomena of the heart were observed. Epistaxis was not frequent; but Dr. Pentland observed it in many cases, towards the termination of the disease, in the autumn of 1847. No enlargement of the spleen was noticed, and bed-sores were remarkably infrequent.

Longford.—Both before, during, and after the fever, dysensery was very general. Dr. Harris reports that, in his practice, local complications occurred in the following order of frequency:—head symptoms, about one in six; bronchitis, about one in ten; and anasarca, about one in twelve. Relapses were very general; "relapsed cases not being so severe"(*c*). Petechiæ appeared in a few instances in the relapse, when they were not present in the primary fever. The only morbid phe-

(*a*) Dr. Bewly. (*b*) Dr. Wallace. (*c*) Dr. Daly.

nomenon of the heart observed was "feeble action, accompanied by irregular and intermittent pulse"(*a*). Epistaxis was chiefly observed in young persons, and when the head was engaged. Enlargement of the spleen was not noticed, and bed-sores were excessively rare.

Fourth Class of Queries,—including the Mortality and morbid Appearances.

Carlow.—We have no report from this county as to the proportionate mortality amongst the different classes attacked; but Dr. Roche remarks, that it was greater amongst those attended at their own houses than in hospitals. No *post mortem* examinations were made.

Kilkenny.—The mortality was much greater amongst the inhabitants of towns than in rural districts, and also amongst those attended at their own houses than in hospitals. Dr. Ross states, that in his district no *post mortem* examinations were allowed.

King's County.—Dr. Cheevers writes:—"The least mortality was amongst the poor; in my hospital not above five per cent."(*b*) Dr. Bird, of Banagher, states, that the mortality from fever was small, but that it was followed by very fatal sequelæ. The mortality was decidedly greater, "in the proportion of three to one"(*b*), amongst those attended at their own houses than in hospitals. No *post mortem* examinations were made.

Queen's County.—The mortality was much greater, in proportion to the numbers attacked, amongst the higher orders than amongst the poor; and also much greater amongst those attended at their own houses than in hospitals. Towns and densely populated districts exhibited a greater mortality than thinly populated country parts. No *post mortem* examinations were made.

(*a*) Dr. Harris. (*b*) Dr. Cheevers.

Dublin.—When fever attacked the higher classes it was invariably of a much more fatal character than amongst the poor. The per centage of mortality was also much greater amongst those attended in their own houses than in the cases attended in hospital. From the reports furnished to us it would appear that *post mortem* examinations were made but in very few cases. In those examined at the North Union fever sheds, Dr. Wyse states, that the only remarkable appearance was splenic engorgement.

Wicklow.—The reports from this county differ as to the proportion of the mortality in the various classes attacked, but very few of the higher classes seem to have suffered from the disease. All agree that the mortality was greater amongst those attended at their own houses. No *post mortem* examinations were made.

Louth.—But very few of the higher classes were attacked with fever in this county. Both Dr. Browne and Dr. Stronge agree in stating that the per centage of mortality was greater among those attended in hospitals than in their own houses. The former physician is of opinion that this may be partly accounted for by the fact, that those cases admitted into hospital were usually of the worst character, and from among the poorest classes in society; the towns and densely populated districts suffered most. No *post mortem* examinations were made.

Westmeath.—The mortality was greatest amongst persons in comfortable circumstances, and was also much higher amongst those attended at their own houses, and in the towns, except in Moate, " which is clean and airy, and here the mortality was not greater than in the rural district"(*a*). No *post mortem* examinations were made.

Meath.—The higher classes suffered most; the per centage of mortality was much greater amongst those attended at their own houses than in hospitals; and towns and densely populated districts generally were most severely visited.

(*a*) Dr. Bewly.

Longford.—The proportion of mortality was much greater in the higher than in the lower classes; "one in twelve in the former, about one in twenty in the latter"(*a*). The per-centage of mortality was also greater in the hospitals than in those attended at their own houses. Towns, and densely populated districts, suffered most. No *post mortem* examinations were made.

Fifth, Sixth, and Seventh Class of Queries,—relating to the Duration of the Disease, Modifications, and Sequelæ.

Carlow.—The disease was called a five-day fever in those cases which were followed by relapse. In the other forms the duration was very various, as was also the length of the convalescence. The symptoms varied in individuals of the same family, placed under similar circumstances. "In some," writes Dr. Roche, "the fever was of a much more severe character than in others; in some dysentery, in others cerebral symptoms prevailed." The most usual sequelæ were, violent pains in the lower extremities, anasarca, swellings, and abscesses in the cervical region.

Kilkenny.—The usual duration of the primary fever was from five to nine days; the length of convalescence averaged four weeks. The primary cases that were followed by relapse were generally of a milder form. Members of the same family, who had contracted fever from the same cause, presented symptoms differing much both in intensity and local complications. Dr Ross, of Castlecomer, states that the most usual sequelæ of the disease were cutaneous eruptions.

King's County.—The ordinary duration of the disease was, "in simple fever, from ten to twelve days; in eruptive or typhus fever, from ten to twenty days"(*b*). Twelve days was the average length of convalescence. The greatest diversity in symptoms was noticed amongst individuals of the same family, placed under similar circumstances, and even in those who contracted

(*a*) Dr. Harris. (*b*) Dr. Cheevers.

fever from the same cause. The most usual sequelæ were anasarca, swelling of the limbs, diarrhœa, and pain over the liver and spleen.

Queen's County.—The duration of the disease varied from nine to fifteen days, to be followed in many cases by very tedious convalescence, extending sometimes to six or seven weeks. The primary cases, which were followed by relapse, were almost invariably of a very mild character, and of short duration. "Diversity of symptoms was very rarely observed in persons of the same family, placed under similar circumstances, except the modifications incidental to age and constitution. The type of the disease was the same, though, in individuals, complications might differ"(*a*). Anasarca, cervical glandular swellings, often ending in suppuration, and splenic enlargement, were the most usual sequelæ in this district.

Dublin.—The duration of the disease varied from one to three weeks, and the convalescence was generally tedious, although patients were frequently dismissed from hospital in from five to ten days after recovery. Where relapse followed the primary fever, the latter was usually mild and of short duration. No modification of symptoms was noticed in the reports we have received, in members of the same family, who contracted fever from the same cause, or were placed under similar circumstances. The usual sequelæ were dysentery, diarrhœa, obstinate pains in the limbs, bronchitis, and, in some cases, enlargement of the spleen.

Mr. Thomas Parr has afforded us the following observations upon the state of the spleen: "I beg to relate an interesting and anomalous physical sign which I first observed about twelve months ago, whilst in charge of a temporary fever hospital in Dublin, and which since then I had an opportunity of witnessing a few examples of, namely, a loud continuous murmur in the spleen, accompanied in all cases by

(*a*) Dr. Walshe.

enlargement, as evidenced positively by percussion, and presumptively by the prevailing pathological condition during the epidemic. The reason of my making use of these expressions is, in consequence of no patient in which the phenomenon was observed affording an opportunity of inspection. Indeed it was not until the epidemic was disappearing, or nearly gone, that my attention was directed to the sound; and it was an accident which induced me to apply the stethoscope to the part.

"A patient who was labouring under the short fever, in a well-marked form, having had two relapses, complained of a pain in the left hypochondrium, with throbbing; and being fearful of aneurism, as he had suffered some injury in the part a short time previous, I applied the stethoscope, and was surprised to find a loud continuous murmur in the neighbourhood of the splenic vessels. Thinking, from the constant enlargement of the spleen in the disease, that the sound might have been caused by the disordered circulation in that organ, I sought for it in the situation where dulness was most evident, namely, over the lower ribs; the sound here was more distinct, and I could compare it to nothing I had ever heard before, except the placental souffle; in a day or two the patient (as was usual in these cases) was attacked with diarrhœa, upon which the murmur began to disappear, and, under ordinary treatment, the patient became convalescent, the murmur not re-appearing, and left the hospital quite well, the dulness continuing, but less marked.

"The next case was that of a young man who also suffered from the epidemic, and became convalescent in the usual period (about five days); when, about the seventh day of convalescence, he suffered from relapse, accompanied by considerable pain in the left hypochondrium, increased by pressure, with extensive dulness over the spleen. On applying the stethoscope over the spleen the same continuous murmur was evident. In consequence of the pain and symptoms of inflammation, I applied a few leeches, followed by a poultice, over the part where dul-

ness was most evident; they relieved the pain, and considerably diminished the murmur. In the course of a few days more the sound was completely removed; the patient became quite convalescent. In this case no diarrhœa set in.

" The next case was one of more considerable interest; it occurred in the Meath Hospital, and the phenomenon was evident to many, particularly to Dr. Lees, one of the attending physicians.

" A boy, of thirteen years of age, of delicate make and appearance, was admitted into hospital, August 29, 1848, labouring under feverish symptoms, analogous to those of the epidemic of the preceding year, accompanied by bowel complaint, dulness over the spleen, and a sound which resembled the muscular murmur; pulse, 76; ordered chalk mixture with opium. 31st. Bowels better; murmur more distinct, and showing that it did not depend on the muscular fibre; a similar sound could not be heard over any of the large muscles, as the glutæi, recti, or oblique, even when irritated by friction. September 2nd. Dulness more marked, and murmur more distinct than I ever heard, resembling the placental souffle in a pregnant woman. The patient complained of slight pain on pressure over the liver, in which place a trace of murmur was also discovered. This day a copious crop of sudamina appeared; diarrhœa continued slightly.

" The following evening the patient was attacked with considerable epistaxis. The next day the patient appeared much better, the febrile symptoms much diminished; dulness decreased, and murmur indistinct; pain in the region of the liver gone, and no abnormal sound; bowel complaint well. In the course of a week or ten days he left the hospital quite well, murmur having entirely disappeared, but still considerable dulness over the spleen remaining.

" The foregoing cases will be sufficient to illustrate the phenomenon to which I allude. I have met with it since in several

others, and a few times have heard it in chlorotic females, but in none with the same degree of intensity as in those affected with the peculiar fever and diarrhœa in which I first observed it.

" In many of the cases in which the sound was audible, it presented itself in a great variety of forms; in some like a modified venous hum, and in others as if fluid were rushing through a number of minute cells, conveying to the ear the idea as if the cells were dry, and so a crackling or rustling sound produced. In no instance was I able to hear the arterial whiff, and from that I argue that it was entirely confined to the venous circulation in the organ. In some instances the phenomenon was fugitive, and when it was evident alteration of position had no effect on the sound. In none of those cases could the least trace of venous murmur be discovered in the jugulars, or other large veins, except in chlorotic females; and that it was not dependent on muscular fibre I positively assert, as in none of those cases could muscular murmur be heard, even when irritation of the fibre was made use of. Pressure of the stethoscope could not have produced it, as I used the instrument most delicately, and pressure could have no effect on the organ where the sound was most distinct.

" In the three cases which I have selected for illustration, the phenomenon presented itself in each under very interesting circumstances. In the first, the murmur began to disappear as soon as diarrhœa set in; in the second, the sound diminished under local depletion, and diarrhœa did not appear; and in the third, though diarrhœa was present from the first, the sound increased till nature relieved itself by epistaxis, and no relapse of the original fever appeared.

" If I may venture an opinion as to the probable connexion between the fever and dysentery, I think that the congestion of the organ increased the flow of blood into the portal circulation, and thus an increased secretion of bile is produced, which acted deleteriously on the mucous membrane of the intestines.

" In a few cases I have heard this sound over the liver, as

mentioned in the third case, but never in any well-marked form; in each there were symptoms of passive congestion of that organ; and in one case of hepatitis which I lately saw, there was no evidence whatever of it, nor was there any affection of the spleen, as inspection proved, for the case terminated fatally.

" Since I first became acquainted with the phenomenon, I looked for it often in cases of typhus, but never succeeded in discovering it. Louis, in his Researches, states, that the great majority of cases of typhus presented enlargement of the spleen, with more or less softening of the organ, but in no instance does he appear to have used the stethoscope; and yet he says the softening is in some way connected with a febrile state of the body, and depended on a change in the blood: what that change may be I cannot say."

Wicklow.—The duration of the fever was usually from a fortnight to three weeks, and convalescence lasted for about the same period of time: " This depended," writes Dr. Nolan, of Wicklow, " in a remarkable degree upon the state of the hospital; when crowded (as it unfortunately too often was), convalescence was most tedious, and relapses frequent; but when the institution was relieved by a supplementary hospital, the beneficial effect was most striking." The most usual sequelæ were anasarca, swellings, dysentery, and general debility.

Louth.—From a fortnight to three weeks was the average duration of the fever; " on the eighth day the crisis generally took place, and often on the fifth; but in almost all cases a relapse followed, by which the disease was protracted to thirteen or fourteen days, or even longer"(*a*). The convalescence was usually tedious, but little difference was, in general, noticed in the symptoms in individuals of the same family. " In some families," writes Dr. Browne, " there was a greater tendency to dysentery accompanying or following the fever than in others,

(*a*) Dr. Stronge.

which, it is probable, ought to be attributed to the particular kind of food they had lived on, and to other circumstances under which they might have been placed. The most usual sequelæ were anasarca, swellings, dysentery, diarrhœa, and severe rheumatic pains in the extremities.

Westmeath.—The average duration of the disease was about ten days. "Typhus fever generally ran from nine to fourteen days; but in several cases death occurred on the fifth or sixth day. The other fever terminated with extraordinary regularity on the fifth day"(*a*). The convalescence was generally protracted to three or four weeks. No difference was noticed in the symptoms of fever occurring in individuals of the same family, further than what might be expected from peculiarities of age and constitution; anasarca, diarrhœa, and hemorrhage from the bowels, were the most ordinary sequelæ.

Meath.—The fever generally lasted for about fifteen days, and was followed by a convalescence of from a fortnight to three weeks. Primary cases, which were followed by relapse, were mild and of short duration, usually from five to eleven days. Dr. Wallace states that he very frequently observed remarkable modifications of the symptoms in individuals of the same family, placed under similar circumstances, and in those who had contracted fever from the same cause; but such was not noticed by our other reporters from this county. Dysentery and cutaneous eruptions were the most usual sequelæ.

Longford.—The duration of the fever varied from five to twenty days, and the convalescence, seldom shorter than ten days or a fortnight, was often protracted to a month. In primary cases, followed by relapse, the fever was shorter and milder; "young children in a family suffered less than adults"(*b*). Anasarca and dysentery were the usual sequelæ.

(*a*) Dr. Bewley. (*b*) Dr. Harris.

Eighth Class of Queries,—referring to the Treatment.

Carlow.—The plan of treatment which was found most serviceable in the late epidemic by the practitioners who forwarded us returns from this county, was essentially stimulant. Wine, ammonia, and other remedies of this class, were very generally employed, but not to any great extent by Dr. Connor. Bleeding, either local or general, was very rarely resorted to, but in the few cases in which he employed it, Dr. Roche states that he found it beneficial. Mercury was used, in combination with opium, where dysentery was present, and to produce its specific effect in some cases in which local congestion occurred or was feared. "Opium was only used in convalescence from fever, when there was insomnia, and great restlessness"(*a*).

Kilkenny.—In this county stimulants were very generally used, and found most serviceable; wine, ammonia, &c., were freely given; general bleeding was not resorted to, and local in chest affections only. Mercury was administered in local complications, and generally early in the disease; and "opium was employed in dysenteric cases only"(*b*).

King's County.—Stimulants were freely administered in all stages of the fever; wine was not much used, in consequence of the expense; "good whiskey was the chief stimulant, together with stimulating medicines"(*c*). Blisters were also much employed. Neither local nor general bleedings were had recourse to; mercurial alteratives were given, but opium was not exhibited except when diarrhœa or dysentery prevailed.

Queen's County.—"In the treatment of the fever in this county, the use of stimulants was, in nearly every case, required to an extent," writes Dr. Walshe, "that he never before saw necessary." Wine, spirits, and medical stimulants of all kinds, were generally used; "general bleeding," to use the same physician's expressive words, "could not be thought of;" local bleed-

(*a*) Dr. Roche. (*b*) Dr. Ross. (*c*) Dr. Cheevers.

ing even seems to have been rarely found productive of satisfactory results in the practice of those who tried it. Mercury, to produce its alterative effect, was, in some case, found beneficial, but it does not seem to have been employed with the intention of producing its specific action. Opium was chiefly given when dysentery occurred, and generally combined with hydrargyrum cum cretâ.

Dublin.—Plenty of nourishment and the free use of stimulants, were found to be absolutely necessary in the treatment of the late epidemic fever in the large hospitals into which the patients from the city and county were received, and were also equally demanded in the treatment of those cases which occurred in private life. Wine was freely given, and with the best effects. General experience was decidedly opposed to the use of bleeding in any form. In some cases of local congestion the application of a few leeches, or the abstraction of a small quantity of blood by cupping-glasses, was found beneficial. Mercury was only given as a mild aperient or alterative, and sometimes, combined with Dover's powder, in dysenteric cases, it acted beneficially. Opium does not appear to have been very generally employed; "it was very useful for allaying the vomiting of the secondary fever"(*a*). "A combination of morphia and tartar emetic was found so valuable in cases of excitement and delirium, that it was styled a specific in the North Union fever sheds"(*b*).

Wicklow.—Stimulants, nourishment, and an expectant plan of treatment, were employed by most of the practitioners in this county. Dr. Darby employed emetics and mild purgatives in the early stages; leeching and counter-irritation in the latter stages. Wine and whisky were found most useful. General bleeding was very rarely employed, local depletion with much benefit in congestions of internal organs; but Dr. Boswell reports that he employed both general and local bleeding with

(*a*) Dr. Battersby. (*b*) Dr. Wyse.

benefit where inflammation attacked any internal organ. Mercurial preparations were only used with the intention of acting as alteratives or mild purgatives in jaundice cases. Opium was not much employed: "In cases of continued low delirium," says Dr. Nolan, "I used it often, and with benefit, particularly when combined with tartar emetic, as recommended by Dr. Graves."

Louth.—An expectant treatment was chiefly followed by practitioners in this district. Nutriment was freely given, and wine, beer, and other stimulants, very generally employed. General bleeding was not used, and local very rarely. Mercury administered in mild alterative doses, was often found beneficial; and opium was given freely with advantage in restlessness and want of sleep; also, in the form of Dover's Powder, when diarrhœa or dysentery occurred. Dr. Browne, of Dundalk, has given the following short *resumé* of his plan of treatment:

"In the treatment of the kind of dropsy that followed the fever so frequently, the greatest advantage was derived from the use of the preparations of iron, in combination with diuretics; and in many cases of rheumatism, besides opiates, much benefit was derived from the use of colchicum. At an early period in the treatment of the fever, we thought, in some instances, that the relapse was prevented by the use of quina, given in pretty large doses, but latterly it seemed to fail in this respect, and, besides, when given in solution, it was so apt to induce diarrhœa or dysentery, that it was soon given up. The use of salines also frequently had the same effect, and had to be discontinued, except the antacid water of ammonia, which seldom disagreed. Indeed I might say, with the exception of stuping the epigastrium, together with leeching and blistering, the expectant treatment, in the primary stages, was very much followed."

Westmeath.—The reports from this county agree as to the benefits derived from a stimulant plan of treatment in the late epidemic; as regards the administration of medicines an ex-

pectant system seems to have been adopted. Wine and other stimulants, strong broth, &c., were freely given; bleeding, either general or local, was rarely resorted to; mercury was merely given as an alterative, or, combined with opium, to arrest diarrhœa or dysentery. "I used opium frequently, and sometimes with marked benefit, with and without wine; extreme restlessness and nervousness, subsultus tendinum, &c., were the symptoms chiefly relieved by its use"(*a*).

Meath.—Here, as in most other districts, stimulants were freely employed in the late epidemic. Dr. Nicolls, of Navan, however, reports that he used them only sometimes, and that the treatment he found most serviceable consisted in mild aperients, diaphoretics, and the application of leeches. Wine was given in large quantities with the best effects; local bleeding was resorted to only in congestion of internal organs, especially when the head was engaged; but general bleeding does not seem to have been at all employed. Mercury was not used except as an alterative; and opium was given, when dysentery occurred, to allay cerebral excitement.

Longford.—Stimulants, especially wine, combined with nutriment, were found most successful in the treatment of the fever in this county. Some practitioners, as Drs. Daly and Harris, commenced the treatment by the use of mild cathartics and diaphoretics. General bleeding was not at all resorted to, and local in a very few cases where the head was engaged. Mercury was but little employed; Dr. Daly found its effects useful when symptoms of effusion became manifest. Opium was given with advantage "when delirium occurred early in the fever"(*b*), and when dysentery occurred.

Summary of Reports not comprised in the foregoing Details.

Dr. Connor has afforded us the following report of the Carlow Fever Hospital:

(*a*) Dr. Bewley. (*b*) Dr. Harris.

"The number of patients admitted during the year 1847 was 657, of whom twenty-five died.

"There have been more patients under treatment in the county of Carlow Fever Hospital during the last year (1848) than for any similar period: the number exceeded the sum of those admitted during the first seven years of its establishment, previous to my appointment (1836). The fever has been characterized by symptoms of great debility; in very many cases there were *severe hemorrhages*, in others dysenteric attacks: violent perspirations, not critical, were constantly observed. Measly eruptions (so fatal in 1837) and ink spots (so termed by the attendants) were common, as were swelled feet and general anasarca towards the period of convalescence. A jaundiced condition of the skin was frequent. At one period almost every patient was admitted with, or had tendency to dysentery, or other disease of the bowels, at times amounting to cholera; of these but few fatal cases occurred. The fever, though severe, in our hospital, and in the county generally, it is believed, has not been very fatal, following a law of epidemics of typhus, that, 'When an unusual number are attacked, the deaths, though numerically greater, are less per cent. than in seasons in which there are only the ordinary number of patients.' It may be said, indeed has been said, that 'the diffusion of the poison has the effect of rendering it less virulent.' There has been one symptom so very remarkable that I cannot avoid particularly noticing it,—the tendency to relapse after what is called the 'five-day fever.' The relapse occurred so often as to be the rule, and with such regularity that, in place of the fever being short, I consider it of the usual duration, with some days (three to seven) of almost perfect intermission or absence of feverish symptoms. In many cases more than one such relapse took place. The number of days each patient remained in hospital averaged twenty and a half, rather above the average of former years; of those that died, the average age of one-third was more than 60. Several deaths were from causes totally unconnected with typhus, but this occurs

in every similar institution to a certain extent. For the last two years the mortality has been little above 3½ per cent."

Dr. Lalor of Kilkenny has afforded us the following information in addition to that given in his communication upon the same subject, published in our fifth volume:

"In reply to your queries which bear upon the antecedents of our late fever, both as an epidemic and as affecting individuals, or the causes which influenced its development, I beg to offer you the following information.

"Gastro-purpuric fever, which was the type prevalent here, commenced about the summer of 1845, and assumed the range of a wide-spread and virulent epidemic about October, 1846. The fever, previously prevalent from the summer of 1844 to the summer of 1845, had been of the simple gastric form. In 1844–5 small-pox also had been more common than usual, and had been very fatal in our filthy and ill-ventilated lanes and houses, and amongst the ill-fed and sickly children of the most destitute of our people. Our old endemic, fourteen-day maculated typhus, had diminished greatly in frequency, both absolutely and comparatively to other febrile diseases, from the time that gastric fever had become prevalent; and this relative infrequency of typhus fever has continued up to the present time, through the years 1844–5–6–7, although the actual number of cases of this disease was, perhaps, as great from the autumn of 1846 to the autumn of 1847 as in any year from 1838 to 1844. The distemper has been very prevalent amongst cattle in this neighbourhood during latter years, but I cannot state the dates or ranges of its invasion. In the year 1843 I examined some cows that had died of this disease, and I found extensive and intense inflammation of all the tissues of the lungs, which was evidenced by enormous effusions of lymph and pus into the cavities of the pleura, grey and red hepatization of the parenchyma, and plastic sputa in the bronchial tubes. In one case pus exuded from the parenchyma and veins of the liver when cut into. During our epidemic, I believe that the num-

ber of cases of fever was generally in proportion to the denseness of the population, circumstances being alike as to the condition of the people in respect of destitution, want of cleanliness and of ventilation, assembling in crowds, and the various other collateral influences.

"The character of our fever was the same for a year previous and for a year after the failure of the potato crop in 1845, with the exception of the eruption of purple spots, which became superadded just before the time this failure began to manifest itself. This eruption, therefore, and its accompanying symptoms or sequelæ, are the only phenomena which can be attributed to the general change of diet amongst our people, consequent on the failure of the potato crop. But I am not disposed to think that the eruption was in any instance directly produced by any change, or by any description of diet, notwithstanding that the suspicious concurrence of both facts appears to place them in the relation of cause and effect; and I am inclined to believe rather that both had a common cause, probably some atmospheric influence. According to my observation, the purple eruption became connected with the reigning gastric fever somewhat before the time when the leaves of the potatoes first showed symptoms of disease, and of course still longer before the diseased tubers, or any substitute for them, had come into use. The eruption appeared sometimes, though not generally, in the cases of persons who had eaten no diseased potatoes, and who had made no alteration in their diet. Both these facts are contradictory to the supposition that the purple eruption was the specific result of diseased potatoes, or of any particular article or change of diet. That diet, however, exerted some influence over the type of fever appears probable, from the fact that the larger proportion of those attacked with fever, amongst the more comfortable classes, exhibited the fourteen-day maculated form, whilst a very large majority of the poorer and worse-fed showed the gastric and gastro-purpuric type. I will relate a

few cases illustrative of this strange fact before I shall attempt to speculate on its cause.

" 1. Of the vast number of the pauper inmates of the work-house who were attacked with fever, I would say that at least nineteen-twentieths presented the gastric or gastro-purpuric form; whilst out of four of the officers whom I attended, viz., the master, the clerk, the assistant school-mistress, and the assistant school-master, three showed fourteen-day maculated typhus. The assistant-master, the only one of these officers who presented the gastro-purpuric type, was in very straitened circumstances, from having a very large family, and from embarrassments entailed previous to his appointment.

" 2. Shortly after a portion of the House of Correction had been taken by the board of guardians as a supplementary work-house, and occupied by paupers transferred from the work-house, fever appeared amongst these paupers, and continued to prevail whilst they remained in the institution. All the cases which occurred were of the gastric and gastro-purpuric form; and the prisoners, who occupied another portion of the building, under the same roof, but consisting of separate apartments, remained during the whole time free from fever of any form. The superintendent of the house and his wife, who had charge of the paupers as well as of the prisoners, were both seized with fever some weeks after the admission of the paupers, and within a day, the one after the other. Under the circumstances, I think that there can be no doubt that they both took fever from the paupers; but in the superintendent and his wife fourteen-day maculated typhus was developed; their servant maid, a healthy, well-fed girl, about twenty years of age, was subsequently attacked, and her fever was of the gastro-purpuric form.

" 3. In March and April, 1843, I attended a farmer in very comfortable circumstances, during an attack of maculated typhus fever, which, commencing moderately, ran through the usual course. A diffuse measly eruption (which disappeared on pressure) appeared about the fifth day, without any remission of

the symptoms, and continued until the termination of the fever, when it disappeared; about the seventh or eighth day the pulse became rapid, small, and shabby; the tongue dry, brown, and crisped; the teeth and gums coated with sordes; low delirium set in; and the countenance and position concurred with the other symptoms in indicating the usual typhoid prostration and debility, and calling for support and stimulation, until about the eleventh day, when some abatement of the symptoms took place, and my patient improved gradually from that time until the fourteenth day, when he was convalescent, and did not afterwards relapse. Some short time afterwards the servant-maid of this farmer, a fine-looking girl, aged about 24, and, previous to her illness, the picture of rural health, was sent into hospital in fever, which exhibited in its course a perfect specimen of the gastro-purpuric type. Sudden in its invasion, it was quickly followed by a rapid thrilly pulse, very hot skin, thick creamy coating of tongue, restlessness, but no delirium; great thirst and irritability of stomach. Her fever terminated critically and rapidly in the course of a single night, after about seven days' duration. A scanty eruption of purple ecchymosed spots, persistent on pressure, circular, and about the circumference of a split pea, came out with the remission of the symptoms, and the falling of the pulse to 70 in the minute. After remaining convalescent for about eight days, she was again attacked with feverish symptoms, and went through a second fever of about the same duration, and characterized chiefly by severe general pains, and a sense of soreness over the body and in the joints, and by green vomit, but without the appearance of any eruption.

"The only essential point of difference, in the examples instanced, between the parties attacked with gastro-purpuric fever on the one hand, and with fourteen-day maculated typhus on the other, consisted in the habitual use during health of animal food by the latter, and of a diet chiefly farinaceous or vegetable by the former. All had abundance of food, and

the advantages of age, and bodily health and strength, were sometimes with the one party, sometimes with the other; the contagion was at one time that from a typhus patient producing gastro-purpuric fever, and at another time *vice versâ*. Hence I would conclude that, whilst our epidemic fever had for its origin some atmospheric influence, it was propagated also by contagion; and that the contagious or atmospheric influence was so far modified by the previous diet of the persons attacked, that fourteen-day maculated typhus was developed in general, in those habitually using animal food, and gastric or gastro-purpuric fever in those living chiefly on farinaceous or vegetable diet. The observations I have made as to the use of such innutrious articles of diet as turnips, the roots and leaves of various vegetables, thin soups, &c., have led me to infer that, in proportion as they were deficient in nutritive qualities, they contributed to render those who habitually used them more susceptible of the febrile poison, whether produced by atmospheric influence or by contagion, but that they never directly or *per se* produced typhus, gastric, or gastro-purpuric fever.

" My observations likewise have led me to set down the influence of deficiency in the quantity of food in the development of fever, as the same with that of deficiency in its nutritive qualities. I have seen many persons reduced to an extreme state of debility, from the actual want of food of any description, who exhibited no symptoms of typhus or gastro-purpuric fever. And those fevers are not developed in lunatics and others who, voluntarily or involuntarily, are starved to death.

" Other influential agents in the propagation and modification of fever have been foul air, want of ventilation and cleanliness, overcrowding, the assembling of the people in masses, vagrancy, and wet and cold weather. I have repeatedly observed a very marked increase in the number of admissions, bad cases, and deaths, during or after a few wet, cold days; and a few days of open, dry weather produced opposite results. From an early observation of this fact, I ventured, about the

month of March, 1847, to express my conviction, contrary to the almost universal opinion, on an inquiry before the board of guardians, that our epidemic would decline from the commencement of fine spring and summer weather, an opinion which was fully substantiated by a very marked and gradually increasing diminution, both in the frequency and virulence of fever, from the month of May onwards through June, July, August, and September.

"Gastric and gastro-purpuric fever were more frequent amongst females than amongst males; and amongst those under and over the middle period of life, or that extending from 15 to 40, than amongst those in this latter period. Some of the very worst forms of gastro-purpuric fever occurred in the two extremes of bodily condition, viz., in the very fat and the very emaciated. Those with dingy, dry, rough skins, and with lank, scanty, and erect hair, indicative of very imperfect nutrition, generally exhibited an extremely bad type of gastro-purpuric fever, and consecutive diarrhœa. Dysentery and diarrhœa were very prevalent during the winter of 1846–7, particularly among the frequenters of the soup-kitchens, and of course they frequently preceded fever. This precession appeared to me to be sometimes merely accidental, and unconnected with the subsequent fever, at other times as ancillary to the development of the febrile poison by lowering the constitutional powers; and at other times the diarrhœa and dysentery ran their own course, with accompanying febrile symptoms very like those of the prevailing fever, and like it they terminated critically. I have never known scurvy or purpura to precede the first attack of fever; but invariably, according to my observation, the purpuric eruption was preceded by gastric fever, or occurred as a complication of typhus, variola, or measles. This latter occcurrence I have seen very rarely, and for the first time subsequent to writing my observations on fever already published in this Journal.

"I have often reflected and inquired with myself, was

there any particular state of body which favoured the development of that particular type of fever which characterized our late epidemic, viz., the gastro-purpuric? and, on generalizing the facts within my knowledge, with a view to solving this question, I have been forcibly struck by the light which appears to be thrown on it by the following results of various analyses of the blood, taken from M. Lecanu's Essay.

"According to Lecanu, the proportion of water is greater, and the proportion of globules less, in woman than in man; in the lymphatic than in the sanguine; in infants and in old people than in adults; in individuals badly or little nourished than in well-fed individuals.

"According to M. Denis, the proportion of serum is greater, and the proportion of globules less, in the two extremes of age than in middle life; and, according to MM. Prevost and Dumas, in herbiverous than in carnivorous animals(*a*).

"The ages, the sexes, the classes of society, and the habits of body amongst which this peculiar type of gastro-purpuric fever, which characterized our late epidemic, was most prevalent and most exquisite, corresponded—may I not say?—precisely with those in which it would appear from the results of the analyses of the celebrated chemists already quoted, that the serum was in larger proportion in their blood than the globules; and I know of no other common point of agreement between them all.

"Again, the classes of society, the ages, the sexes, and the habits of body, amongst which gastro-purpuric fever was least prevalent and worst marked, were those which, according to the same authorities, had a larger proportion of globules and a less proportion of serum in their blood, and which all concur in no other point of agreement that I am aware of. From the

(*a*) See also Mr. Sullivan's Report on the Progress of Chemistry in our last volume.

best consideration that I could give the subject, I have been led to conclude:—

" 1st. That that state of body, by whatever cause produced, in which the proportion of the serum of the blood is greater, and the proportion of globules is less, is favourable to the development of gastro-purpuric fever.

" 2ndly. That there is no other state of body common to all the classes most susceptible of gastro-purpuric fever.

" 3rdly. And therefore, that this disproportion between the amount of serum and globules in the blood is the remote or predisposing cause of the above fever.

" 4thly. That that state of body, by whatever cause produced, in which the proportion of globules is greater, and the proportion of serum less, is unfavourable to the development of gastro-purpuric fever.

" 5thly. That there is no other state of body common to all the classes least susceptible of this fever."

Dr. Stirling, of Thomastown, county of Kilkenny, writes, that fever visited his district in March, 1847, in two forms:— 1st. From six to twelve days, attended with severe rheumatic pains, lasting about a week, then a rigor, with re-appearance of symptoms, generally much milder than the first attack; sometimes the first attack mild and relapse fatal. 2nd. Typhus, extreme prostration, dark petechiæ, jaundice, diarrhœa, or dysentery. He never employed local or general bleeding.

From Dr. Thomas Woods, of Parsonstown, King's County, we learn "that fever assumed the shape of an epidemic in Aghamon in June, 1847, but, although many cases occurred, the disease was generally mild. Dysentery and diarrhœa were prevalent at the same time, but seldom as complications of fever. The people of the district were in great want, and almost all suffered from debility, the result of semi-starvation. The type of the fever was 'simple continued,' except in three or four cases, which presented all the appearances and ran the usual course of

'typhus.' In the simple continued form the cases were generally complicated with bronchitic symptoms, and a few with diarrhœa, which, however, did not prove troublesome. In the cases of typhus the head was more engaged than any other organ, as was evidenced by the early appearance of delirium followed by *stupor;* in fact, the usual stages of bad typhus fever were passed through with very little difference from what is commonly observed.

"In the simple cases of fever I treated, in fact I did little more than leave them to themselves. If any particular symptom, such as bronchitis, diarrhœa, &c., occurred, I acted accordingly; if such did not take place, I gave an aperient, and watched that nothing went wrong. In the cases of typhus, where the head was chiefly engaged,—and in these cases only did I perceive petechiæ,—I had the head shaved, leeched, and subjected to cold applications; I gave calomel, two grains every third hour, and tartar emetic, one-eighth of a grain, at like intervals. These means, with turpentine enemas and blisters to the back of the neck, with chicken-broth or beef-tea throughout, from the commencement of the attack, were the general remedies I employed until a crisis occurred. The crisis, which seemed better marked the more formidable the illness, took place usually on the fifteenth day. After the crisis I gave wine in small quantities, stimulant mixtures (chiefly ammonia), and afterwards tonics, always keeping up a good supply of nutriment. Convalescence was not long, and relapses not frequent. Except in two cases I did not see any bleeding from the nose. In these cases I think it resulted more from congestion than debility. I did not perceive any tendency to *scurvy* in the fever patients.

"The hospital was open during three months; it contained only twelve beds, but these were always full. It was situated on very high ground, and the patients were taken from the same locality. There was not one death in the hospital during the time it remained open, which I attribute to plenty of room and

fresh air; nevertheless the symptoms in some of the cases were very aggravated.

"I do not remember any other information I could send with respect to the fever occurring in my district at that time, but a circumstance happened there lately to which I would like to direct your attention. On the night of the eighth of this month (November, 1848), an aurora borealis appeared with great brilliancy on the high grounds comprising part of the district of Aghamon. Through one of the small houses situated on nearly the loftiest part of the range of hills, a tremulous but bright light flickered for a few seconds; the light was sufficiently strong to pain the eyes, but unaccompanied by any smell or other phenomenon. On the following day, seven persons, out of nine who resided in the house, were attacked by fever; the seven were young men and women: the father and mother escaped. The attack commenced with the usual symptoms of fever, but became speedily very severe in two of the cases, so much so as to prevent their being removed to hospital: in the other five the symptoms of common continued fever ran the usual course. Of the two who remained at home, one died on the ninth day; the other is recovering, having had marked crisis on the eleventh day. Both (a boy and girl, aged 18 and 20) exhibited all the appearances of low typhus fever; maculæ showed themselves on the third day. The head was much engaged, semi-stupid muttering delirium being present. In the boy's case, which terminated fatally, the delirium was accompanied by constant laughing. All are now recovering except the boy.

"The foregoing is, I think, worthy of notice, as being an instance showing clearly the connexion between atmospheric or electrical phenomena and the production of disease.

"Fever is not now prevalent in the neighbourhood.

"In 1847, when fever was prevalent, many cattle died of their peculiar epidemic."

From Tullamore, King's County, Dr. Ridley has given us the following answers to our inquiries :

"From the low situation of this town, being nearly surrounded by bog and marshes, the total neglect of the removal of nuisances from its numerous small lanes, the great number of its poor, and other causes, there is always existing a vast amount of fever for the extent of its population. Since the failure of the people's principal food, the disease has increased very much, and has assumed a more malignant and intractable form. The above causes, however, have had a less influencing effect on the peculiar epidemic which is the subject of this report than might be supposed. This, which, with great truth, is styled 'the *relapse* fever of 1847,' differed from every other form which appeared here; its great suddenness of seizure, its violence, its short duration, the frequency of relapse, its quick subsidence, and the sudden restoration to health, were symptoms of a new and extraordinary nature, added to which were the universality of its seizure, and the trifling amount of mortality attending it.

"It appeared here in the month of May, 1847, and lasted until February, 1848; it was most violent and universal in the months of August and November. It attacked principally the poor, but the rich, and those who lacked not the necessaries or comforts of life, were not exempt from it. The mere want of food did not appear the most predisposing cause, but the *want of clothing* of a warm sort. Chills, from suppressed perspiration, were the most common cause in rich and poor. In this way it differed from the other fevers of the country, in which a low impoverished state of the system predisposes so much to their invasion. *It did not appear to be contagious*, nor did age or sex appear to have any influence. I have seen the very old, and infants on the breast, go through its stages successively. The symptoms in rich and poor were much alike; probably in the former there was a greater tendency to cerebral complication, and in the poor the sequelæ were of a more formidable nature.

" Upon its first seizure, headach, nausea, pain of back and limbs, *great prostration*, rigors succeeded by thrills of cold alternately with heat, thirst, full bounding pulse, intense heat of skin, white, creamy tongue, delirium, were most like the symptoms ushering in an eruptive disease. These symptoms continued with more or less severity until the sixth or seventh day, when profuse diaphoresis (in some cases to an almost incredible extent) terminated the attack. The skin then became cool, pulse fell, appetite and sleep returned, and all feelings of malaise ceased; a desire to rise from the bed was often acquiesced in, and the patient walked about in apparent convalescence for four or five days, when headach, rigors, nausea, and lassitude set in, and the whole train of symptoms of the primary attack followed. These ran their course also to about the same period, and terminated in like manner by a sweating crisis. The latter was sometimes followed by a profuse diarrhœa, which, in the ill-fed poor, often ran into dysentery or low typhus. When organic complications occurred, it was almost always during the second fever. These were, during the summer months, of a gastro-enteric form, and as the year advanced the pulmonary organs were mostly engaged. I *have never noticed any morbid condition of the spleen*, though, from the intermittent nature of the disease, my attention was directed to the state of that organ. A few cases of endocarditis were the only affections of the heart I observed. Petechiæ were not usually an attendant on the disease. They never appeared in the first attack, and, whenever seen in the second fever, were premonitory of some serious organic complication. I have not observed purpuric spots in any of my cases. As few cases occurred not followed by relapse, it may be fairly looked on as a necessary and characteristic part of the disease, which no care or treatment could prevent. During the latter months of the existence of this epidemic, petechiæ, continued fever, and low typhus, were also prevalent. The following distinctive characters of the relapse fever I may again enumerate, viz.:—seizure more sudden, with

immediate prostration; peculiarly violent nature of the fever, the circulation being in a state of high excitement; the rarity of organs being more than functionally disturbed during first fever; the occurrence of the sweating crisis on fifth or sixth day; the intensity of that sweating crisis; the quick cooling down of system, and subsidence of fever; the speedy convalescence; the second fever or relapse occurring from the fourth to the twelfth day; the second fever being nearly similar to the first; the subsidence of the second fever, with quick convalescence and return to health.

"In all these symptoms it differed widely from the ordinary fevers of the country, but in no one so much as the small amount of mortality. I am unable to give an accurate statement of the proportion of cases to extent of population; there was scarcely a house amongst the poorer class unvisited by it.

"The usual sequelæ were dysentery, anasarca, phthisis, rheumatism, paralysis, and deafness. The treatment was moderately antiphlogistic, seldom venesection; purgatives, diaphoretics, and local depletions, were the usual means resorted to in the first fever. The relapse was often attempted to be warded off by the employment of smart emetics, purgatives of an active nature, &c., &c., but nothing seemed to have any effect in its prevention. Wine was never used except where it ran into low typhus; mercury only in local inflammatory complications; and opium chiefly to control excessive diarrhœa.

Dr. Swan, of Abbeyleix, Queen's County, says:

"The famine fever appeared here about 1st September, 1846. For eighteen months previously fever, both typhus and common continued, had been gradually becoming more prevalent; but in the autumn and winter of 1846 we were overwhelmed with a fever, attacking in the first instance the poor, the dirty, and the starved, but capable of being propagated by contagion to the comfortable and strong.

"Amongst the very poor the principal symptoms were those of debility. Pulse weak, 80 to 100; tongue dry, often

glazed; skin dry and dirty looking; appetite often very keen; patients in hospital for some days, in several instances, eating a moderate meal voraciously, and dying in a few minutes after: as the nurse said, 'the hunger was in their hearts.' Vomiting not common, but diarrhœa very; seldom delirium; in some cases purpura, others scurvy, and again in others gangrene of extremities and terrible sloughing from pressure, the sacrum and occipital bone being laid bare in several cases. The disease was most prevalent among males, and exhibited a great tendency to relapse; in some cases the fever being lighted up three or four times. The primary fever generally subsided on the eleventh or fourteenth day, and then, after a period of from three to ten days, the relapse came on, lasting, for the most part, for a few days only. The type of the fever, as it appeared in different members of the same family, was sometimes very different, sometimes exactly similar. Epistaxis was common, occurring at all stages, but I think most usually about the fourth day; a common form of crisis was a severe rigor followed by profuse sweating. The most common sequelæ were œdema of the legs, chronic diarrhœa, and in some instances phthisis. As to treatment:—saline diaphoretics, sometimes carbonate of ammonia; blisters to the epigastrium when vomiting was present; acetate of lead and opium, chalk mixture, and vegetable astringents, nitrate of silver and extract of gentian, when there was diarrhœa; and hydrargyrum cum cretâ and Dover's Powder in dysentery. I never used bleeding, either local or general, nor mercury, except for complications, pneumonia, dysentery, &c. Opiate enemata were given occcasionally in the latter stages, where there was much restlessness, and with good effect. The chief reliance, however, was on diet. Beef-tea, arrow-root, rice, punch, wine, and eggs, were given, cautiously at first, and liberally increased as the patient seemed to bear them."

Report of fever from the Coolock and Santry dispensary, county of Dublin, by Dr. Darley:

"The following table shows the number of cases of fever, un-

der the several heads, which occurred in the Coolock dispensary for the last seven years. I did not till the last year place typhus fever under a distinct head; it was comparatively rare, and any such cases that occurred were placed under that of continued fever. Our district has been always comparatively free from want and famine, but in the last year the fever assumed a more than common virulence. Our medical year terminates at the end of May.

	1842.	1843.	1844.	1845.	1846.	1847.	1848.
Remittent,	19	7	5	17	5	11	14
Gastric, . .	6	7	4	5	25	19	23
Continued,	24	19	20	17	28	27	35
Typhus, .	. . .	. . .	. . .	. . .	. . .	. . .	29
Total, . . .	49	33	29	39	58	57	101
Influenza, .	95	27	77	64	23	54	115

"From the above table it may be seen that fever has been much on the increase for the last three years, whilst in the last year it has nearly doubled that of either of the previous years. It may also be remarked that gastric fever has been much on the increase; for the last three years the average has been 22, whilst for the four previous years it was only $5\frac{1}{2}$. We cannot help connecting this very striking increase of gastric fever, during the last three years, with bad food. Another disease which appears to hold a striking connexion with fever is influenza. I have, therefore, added to the table the number of cases, as taken from the reports, for the last seven years. It may be remembered how prevalent influenza was during and immediately preceding the severe visitation of fever in the years 1846–47. My district is a very favoured one; there is generally abundance of employment, and therefore comparatively little want; the late scarcity and famine has, however, been felt, and fever consequently has increased.

"One of the first cases I met with was in a female, the mother of three or four children. When I first saw her I was struck with the great depression and collapse manifest about her; her pulse was weak, and there were many small purple spots on various parts of her body; there was no hemorrhage. She had been in much want, her husband having been to England in search of work. He had come home before his wife was taken ill, and told me that he had not long recovered from a spotted fever which he had whilst in England, the effects of which were still manifest in his appearance. How far this case may favour contagion I do not say. This woman was sent to hospital, and died there; two of her children had fever of a similar type, with a few purpuric spots; they recovered. The next case was that of a boy fourteen years old, who had a smart attack of fever, with a few purple spots; it was accompanied by bowel complaint. He recovered quickly, but it went through three or four of the family, and also one or two families in the same row of houses; they all recovered, except one female, the mother of a family. In another direction four out of a family of six took fever; they were in rather comfortable circumstances; they had plenty of wine and nourishment, and all recovered. Most of these cases were covered with petechiæ, with a shabby pulse and much delirium. One lad of 17 had a very bad abscess of the parotid gland. I did not remark, that when fever occurred in any one part of the district, it spread from this point, but rather that it pounced upon various parts of the district, one after the other. Relapses were very common; generally caused by making too free, or going out too soon after convalescence. I have not seen petechiæ in relapsed cases; affections of the bowels have been very common, but not amounting to dysentery. I think the very young and the old have not been so liable to the fever; and perhaps more males than females have been attacked. I have had few opportunities of making *post mortem* examinations. In one particular instance I remarked the cavities of the heart filled with fluid blood, and

the walls so friable that the finger easily went through both auricles and ventricles. I did not remark any other particular heart affection, or any enlargement of the spleen; retention of urine sometimes occurred, chiefly in the upper classes; fever in the upper and lower classes differed much in severity, the former collapsing much sooner, and requiring a far greater amount of stimulants than the latter, and attended with more derangement of the sensorium. One case sank after seven days' illness, the pulse intermitting on the fourth day. An accurate critical termination has not been very common. Frequently about the fourteenth day the symptoms appeared to get milder. Sleep was sometimes the first favourable symptom; in some cases a manifest exacerbation has appeared to precede a crisis; local hemorrhages have not been common, nor have I had many cases of bed-sores. One case had numerous boils over the body, and this individual had superficial sores on the sacrum and back, which, however, were easily managed. These latter, boils, abscesses, and local pains, have been the most common sequelæ of local fever.

"Amongst the lower classes convalescence has not been tedious; from two to four weeks may be about the time. I think the character of the fever has been generally similar in members of the same family; it is generally worse in males than females; head symptoms those that chiefly predominate; the mortality has been more, in proportion, among the upper than the lower classes. I have not had many in the former. Of two bad cases, one died, the other recovered. In the lower class there were three deaths in twenty-nine cases of typhus fever. I had no deaths under the other heads; but in my district I have seen no cases of the famine fever which has prevailed in other parts of Ireland.

"The treatment has been, in the commencement, purgatives, where the fever did not begin with bowel complaint, as was sometimes the case; if so, the powder I generally give is the compound powder of chalk with opium.

"When the bowels are acted on I never repeat purgatives, unless by enemata. I use a mixture of sweet spirits of nitre, water of acetate of ammonia, and aromatic spirit of ammonia. Local symptoms were treated as they arose, or engaged the head, chest, or abdomen. The first, being more frequently affected, was shaved and blistered; I occasionally leeched, but never bled from the arm; wine and stimulants were generally used; I never gave mercury unless local inflammation was present, or as a purgative. I think highly of opium, when used with discretion, at all stages. Perhaps the eye is the best indication when it will be allowable. I have often been surprised how little treatment is required in certain cases, chiefly in those cases which may be called *sleeping fevers;* it is also striking what a small quantity of wine tells on the lower classes in fever. We have had for some years back the peculiar epidemic prevalent amongst cattle in this district to a considerable extent."

The history and character of the epidemic fever of 1847, as it appeared in the city of Dublin, is well described in the following valuable report from Dr. Henry Kennedy:

"The field afforded me for observations on the leading features of the late epidemic, as it appeared in this city, was very great; so much so, that, having no assistance, I was quite unable to avail myself of it, at least for many of the ends of science. I saw the sickness not only in hospital, but also amongst the poor at their own houses, in cellars and garrets. During rather more than half the period, the patients under my care were located in tents, which had boarded floors, but no fire-places; the remainder of the time they were in sheds, constructed after the best models.

"Into the difficult question of the cause or causes of the epidemic, it is not my purpose to enter here, farther than to state that nothing transpired, as far as I am aware, which could throw light on the permanent cause. That it was not famine I take to be certain, unless, indeed, it be allowed that want existed in England and in Scotland in an equal degree

with this country; for fever, in the epidemic form, prevailed in London, and in other parts of England, and in Scotland too, at the very least, as early as we had it here. Such is the result of a good deal of inquiry into this point. It is also worthy of remark, that fever prevailed in London in November, 1848, far above the averages, though with us here in Dublin it had for some months previously nearly ceased. Notwithstanding all this, our friends on the other side of the Channel seem most willing to give us the entire credit of generating the late epidemic; and this feeling will most probably continue till more comprehensive views on the matter become diffused(*a*).

"The epidemic fever may be said to have begun in Dublin with the year 1847, possibly a week or two before this. My own appointment bears date the 14th of January in that year. If, however, the attendant dysentery be considered a part of this epidemic, it had begun earlier. The latter, as is well known, had broken out in the South Union Workhouse in

(*a*) "From the data afforded by the portions of this report already published, it is obvious that the fever did not become generally epidemic in Ireland till the beginning of 1847. The following extracts are taken from the numbers of the Medical Gazette for October, November, and December, 1846, and show how prevalent fever was in London at that period:—'The deaths from typhus fever have considerably increased, and the mortality is now double the average.' 'The most fatal and prevalent disease at present is typhus fever.' 'Typhus fever is still very fatal.' 'Typhus fever is the disease which is now most prevalent and fatal.' 'Typhus is still very prevalent and fatal.' And so it went on in London till March, 1847. Again, in the Edinburgh Medical and Surgical Journal for October, 1848, the following sentences, written by Dr. Paterson, of Glasgow, occur:—'In Glasgow the first noted increase of the disease (fever) was in autumn, 1846.' And again:—'As might have been expected, this amount of accommodation was found, even before the close of 1846, to be insufficient.'

"With such facts and admissions before us, it appears to me that we might, with fully as much justice, accuse our English or Scotch neighbours of being the originators of the epidemic; and, while doing so, remind them at the same time how much we are indebted to them for the cholera. The Register-General's quarterly report, ending December, 31, 1848, states that typhus fever has been very prevalent in several districts of England."

November, 1846, even before there was any change of diet, and when there was no general want abroad.

" The contagious nature of the disease was shown in every way in which such could be exhibited. Once it had begun in a family, it spread from member to member with the greatest certainty. There is the valuable, though melancholy record, published by Drs. Cusack and Stokes, bearing on this point.

" The epidemic may be said to have existed as such chiefly amongst the poor; for although a very considerable number of the middle classes were attacked, it could scarcely be said to constitute an epidemic amongst them. Wherever misery, in its widest sense, existed, but, above all, where overcrowding took place, there the fever prevailed. Amongst the poor it very constantly attacked the youngest members of the family first, then the girls and women, and lastly the men. The exceptions to this were very few.

" Of the extent of the epidemic in Dublin it would not be easy to give any very correct idea. The hospital accommodation of the city amounted to about 2500 beds: a greater amount, by 1000, I believe, than were opened in any previous epidemic. It may give some idea of the vast amount of sickness to state that, at the Cork-street Hospital, nearly 12,000 cases applied during a period of about ten months. At one period there were upwards of 400 outstanding tickets; and as many as eighty applications for admission have been made in one day. Still it may be safely stated that all this would give a very imperfect idea of the real amount; for all who had to go amongst the poor at their own houses were well aware that vast numbers remained there, who either could not be accommodated in hospital, or who never thought of applying. It was quite common to find three, four, and even five ill, in a house, where application had been made but for one. I think the very lowest estimate which could be arrived at cannot make the numbers who sickened in Dublin short of 40,000. The greatest pressure on the hospital took place in the month

of June(*a*), from which time the fever gradually declined, till the month of February, 1848, when the epidemic may be said to have ceased. Like other epidemics, this was preceded by serious disease amongst cattle, especially horses and cows. The former were the first to suffer from what, I rather think, was of the nature of severe influenza; but of this I do not speak positively. The latter were still more severely attacked, and very serious losses were incurred, by the number that died over the entire country. This sickness I took some pains to investigate, and found that it essentially consisted in a very bad form of pleuro-pneumonia; not the disease as met with in the human subject, where either the pleuritis or the pneumonia so generally takes the lead, but literally both diseases co-existing, and to a great extent; the quantity of lymph poured out, especially into the lung, being very considerable. This disease often became chronic, in which case tubercles were formed; and in one very remarkable specimen, for which I was indebted to my friend Dr. Faussett, of Clontarf, I was able to trace the tubercles not only through all their stages of growth, but literally growing from the inner surface of the pulmonary veins(*b*).

"At the time the epidemic commenced, the people had but too generally been suffering from the effects of want, and this predisposed them to take the fever wherever they happened to come in contact with it. I say wherever they came in contact with it; for it is well worthy of remark, that a considerable number of cases came under my notice, of persons who were starving, and who yet had no fever on them. They were emaciated, very weak, and had an appearance about the eyes

(*a*) "The same fact was observed in Edinburgh; and I need scarcely add that this is not the first instance in which an epidemic has reached its height upon the same month, occasionally the same day, in places very distant from each other."

(*b*) "It may be observed that physical examination of the chest in these cases enabled me to state positively where mischief was going on, and where not."

which seemed to me to be characteristic of want. But they had no fever on them. Bad, however, as the state of the people was from want, there were still some compensating advantages, for the fever itself was of an unusually mild character; in fact it bore an inverse ratio to the amount of starvation which had preceded it; and this may, I believe, be stated generally, not only of the late, but of preceding epidemics: and I may mention that I saw many pass through the fever while they were literally walking about.

"Starvation, in fact, is, or at least seems to be, within certain bounds, an excellent preparation for the onset of epidemic fever. It will be readily inferred, then, what the difference was in character between cases where want had preceded and where there was none. The former were almost universally mild and easily managed, while the latter were as commonly heavy, and frequently presented complications difficult to treat. The mortality of the latter was much the highest.

"The mortality in the Cork-street hospital, for the year 1847, was one in twelve and a fraction; this includes every case admitted. The greatest number of deaths, by many degrees, occurred in the month of March, when dysentery prevailed so generally, and when many were admitted only to die. The average of this month was one in eight; while that of the month of June, when the pressure was the greatest, only amounted to one in seventeen.

"The average mortality of this hospital, from its foundation in May, 1804, to the present time, and including 154,641 cases, has been one in fourteen and a fraction.

"This fever has been well called a relapsing fever; that is, it was made up of two parts, crisis being very generally present at the termination of each. It was the same form of disease which prevailed in several of our previous epidemics, and has been so ably described by Drs. Rutty, O'Brien, Barker and Cheyne, and others. It was the same type of fever which seems

also to have prevailed in Scotland at the same period. The symptoms were—headach; rigor; furred tongue; sickness of stomach, sometimes amounting to vomiting; quickened pulse; hot skin; pains in the limbs, especially complained of by females: all of these presenting the irregularities which every epidemic is known to do. After these had continued for a variable period, usually, however, between five and nine days, the first crisis occurred; and this was commonly by perspiration, which lasted from four to twenty-four hours. According as it seemed perfect or not, in the same degree was the remission. At times the patient would say he was well, that he had got the cool, and would ask for food; or again, that he was much better than the day before, but still weak. The duration of this interval of ease was most uncertain. In some it could scarcely be said to last a day, when headach, or rigor, or vomiting, more particularly if any food had been taken, recurred, and then the relapse began. In others, from two to five, or even seven days intervened before the relapse set in. During this period they were, many of them, out of bed, using food; and frequently, owing to the great pressure on the hospital accommodation, transferred to the convalescent house, which, in this establishment, is quite separate from the other buildings. In others, again, so long an interval occurred, and they appeared so well, that they were actually dismissed from hospital, but only to be re-admitted at the end of fifteen or twenty days. In a very small number no relapse whatever took place, even when crisis occurred as early as the seventh day.

"In my experience the second, or relapsed fever, was almost constantly the heaviest.

"The relapses, it appeared to me at first, were brought on by using food too soon; and indeed the cry out for food surpassed what any one who had not seen it, would have any idea of. Even during the existence of fever it was not uncommon to hear patients asking for food; and when once a change for the better took place, nothing could keep them from it. I soon

found, however, that, even with the greatest care, relapses occurred; that in fact the disease was not ended by the first crisis. Hence I did not hesitate, once the patient appeared at all fit for it, to allow food; the relapse, by this means, was, I believe, hurried, and time was, in the long run, saved. If the two periods of the fever were joined they usually made up from fifteen to twenty days. In several cases relapse occurred a second time; and I saw it twice take place a third time. One man, on being told that his wife was dead, relapsed on the moment. The following is probably worth noting. A child of two years old, labouring under measles, was admitted into hospital. The mother, who was in health, came with it. In a few days, while they were in the convalescent ward, both sickened, being attacked with fever. They were transferred back to the tents, where, after the ordinary time, they became convalescent, and were sent a second time to the convalescent house. The child now sickened a third time, when bad confluent small-pox made its appearance, under which it sank. There were no other cases of this disease in the house at the time.

" The relapsing fever varied somewhat in its characters as the year wore on, but more particularly towards the autumn. Jaundice was now of frequent occurrence as an attendant on the fever; though not to a very intense degree. With this there were more frequently signs of irritation, if not inflammation, affecting the stomach and duodenum; and it was now also that severe and protracted vomiting showed itself, and, in my experience, more frequently amongst women than men. In fact, the fever was more of the character of gastric than any other; and this, I need scarcely add, modified its general character much. It was now a more prolonged sickness, and the length to which a few of the cases ran on, without any crisis whatever, was very remarkable. I saw different cases last till the fifth week, with a red and pointed tongue, a rapid pulse, hot skin, and great thirst, attended, even at an advanced stage,

with occasional vomiting, particularly if the patient chanced at any time to take a large drink. In one case which I saw with Dr. Creighton on the forty-second day, the fever appeared still to be at its height(*a*). In none of this class of cases did I observe anything of the distinct crisis which marked the more common type of the fever. On the contrary, it subsided gradually from day to day. In the course of the summer, but more particularly when the weather was hot, epistaxis was of common occurrence. In a few cases it appeared to be critical, and in nearly all it relieved the head either of the feeling of lightness, which, at the time, was a very common complaint, or of headach.

"There was a fever of another type from any yet spoken of, which calls for some notice here. I mean typhus fever. But though speaking of it as a different type, I would not have it thought that it was in its nature different from what has been already alluded to. On the contrary, all my observation goes to support the idea that the relapsing fever and typhus fever are but part and parcel of the same disease. On no other principle can I explain the fact which repeatedly came under my notice, viz., that from the same room, amongst members of the same family, and often sleeping in the same bed, these two types of fever were to be seen. The same poison, in fact, generated both. They differed in intensity, and in the presence or absence of early crisis, but in nothing else that I could perceive. Any one who calls to mind the differences which often obtain in a family affected with scarlatina, will readily understand how a similar occurrence might take place in common fever, the poison all the time being essentially the same. In corroboration, too, of this view, I may state that I saw cases where the first part of the attack was of the character of relapsing fever, and the second of the typhoid type. I saw cases showing no eruption during the first attack of fever, but presenting

(*a*) "Hippocrates speaks of fevers occupying a much longer period than even this."

well-marked petechiæ in the relapse. Cases, too, were not uncommon where, without any early crisis, typhoid symptoms appeared suddenly about the tenth or eleventh day. For these reasons, then, I would not separate the two types of fever, but merely look upon them as different phases of the same disease.

"Cases of genuine typhus were, through the whole epidemic, very rare: I mean comparatively speaking. Occasional cases did occur, and these became more numerous with the advance of the season. I saw more cases amongst children and men than amongst females. This was the form of fever which was most fatal, particularly to men, as indeed it seems to have ever been. It did not occur amongst those who had been starved, but rather amongst those who, on admission, seemed to me to be in good condition. It was the disease which had petechiæ when they did appear, for as a whole they rarely presented themselves; and several cases of pure typhus came under notice, which had no eruption whatever. I saw several cases of well-marked petechiæ in children under seven years of age. The eruption itself presented nothing peculiar, being either of the measly character, or the dark brown genuine petechiæ. During the hot weather, and sometimes as the result of crisis, sudamina appeared. One case only of fever attended with purpura came under my notice. The patient was a boy of six years old, remarkably pale and exsanguine; he had no hemorrhage. His father was in hospital at the same time, but presented nothing peculiar; neither had he suffered from want of food. The most remarkable case, as far as regards eruption, which I saw during the epidemic, was in a man of about fifty-five years of age. He had fever on him, and, to all appearance, of a very mild character, and had been about one week ill. The curious point about him was the existence of two large bullæ, one over the left nipple, and the other over the region of the liver. The former was larger than a crown-piece, and was filled with a bloody serum; the other somewhat smaller; the cuticle of this one had been broken, leaving the

true skin of a dark reddish colour. Five or six very large petechiæ-like spots existed over the extremities. From having seen this man only once, I am unable to detail the progress of the case, except that he died within a week; and yet at the time he was seen by others, as well as myself, there was no single symptom, except the eruption be considered as such, which would have led any one to forebode such a result. A drawing of this case is in the possession of my friend, Dr. George Kennedy. The patient was under the care of Dr. O'Reardon.

"There were some complications attending the late epidemic, at which, however, in this paper I can only glance. The great and leading one was dysentery, which, as already stated, seemed to precede the fever in Dublin; though in some other epidemics it is well known to have succeeded it. This complication was the chief cause of the mortality of the fever, as it came under my notice, and during the first half of the year the number of deaths was very considerable. Epidemic dysentery is a serious disease in itself, but joined to fever it becomes a truly formidable affection, as indeed all who have written about it state. With the late fever it joined itself in every stage. I saw cases of dysentery, which had continued some days, suddenly put on all the signs of the worst fever, and so carry the patient off. Here the fever was added to the dysentery. In other cases again, and these by far the majority, fever existed, and then dysentery supervened; while in a third the patient would be convalescent from the fever before dysentery showed itself. No matter at what time, however, it appeared, it was a serious affection. It frequently happened that the discharges were only such as would indicate diarrhœa(*a*); but even this was quite sufficient to affect life, particularly in young persons. This particular subject would require a long essay. Some cases of great interest, where hemorrhage took

(*a*) "It may be observed that extensive ulceration of the intestines existed in many cases where the discharges were those of simple diarrhœa."

place from the bowels, but not complicated with dysentery, came under my notice. In only one instance did the fever so often seen in France come before me. The case ran on to the twenty-eighth day, and the particular lesion of the ileum was found to be very far advanced.

"Affections of the chest were another important complication of the late fever. In the spring several cases of pneumonia presented themselves, and some of the typhoid type. Two cases also of the rapid solidification described by Dr. Stokes, occurred; both of which died. One of these began at the top of the lung, and spread rapidly downwards. Bronchitis was a much more frequent complication than the last. It also, in many instances, rendered the fever most serious; and, advanced as the disease frequently was before admission into hospital, it often proved fatal. Two cases recovered after the acute attack had run into the stage of effusion, and when, to all appearance, the patients were lost. Recovery, under these circumstances, I believe to be very rare. The remedies used were of the most active kind.

"Twice during the year, in March and October, laryngitis became a complication of the fever; in some cases coming on before the fever had subsided, in others during convalescence, but before the patients had left their beds. It came on very suddenly, and in three cases proved fatal. It spread from the throat to the larynx. In none of the cases I saw, eight in number, did there appear to be anything to justify a resort to either mercury or tracheotomy. In the patients who recovered, the treatment consisted in the application of a small number of leeches, poultices, and caustic internally, with the use of wine, and fluid nourishment.

"Except in a very mild form, I saw no cases of scurvy complicating the fever; but in the earlier part of the year several instances occurred where the gums became scorbutic as the fever went on. Some of these patients suffered very much from this. One man in particular, named White, whose arm

had been removed from the shoulder-joint by the late Surgeon Houston, was of this kind. In some of these cases aphthæ of considerable size existed with this state of the gums.

"In one instance a man of 58 presented well-marked symptoms of what has been described as 'scorbutic dysentery;' that is scurvy and dysentery combined. He had large patches of livid discolorations on the lower limbs, and had suffered severely from preceding pains. Notwithstanding he was in a wretched condition, I ventured to give him grey powder, which very soon affected his mouth sharply. During this time he had several bleedings from the gums. All these circumstances made this man's recovery nearly a miracle.

"Several cases of what might be called local phlebitis came under my notice. By local, I mean the disease was so circumscribed that it did not, in its turn, contaminate the system. These attacks occurred chiefly during convalescence, though I saw some cases where the inflammation of the vein took place while fever was still on the patient. In these latter the fever always changed, so as to exhibit more of what would be called the irritative character. No case occurred in which sharp fever did not exist. The parts attacked were the veins above the elbow, the internal saphena below the knee, as it passes behind, but, more frequently than all, the veins close to Poupart's ligament. One man was attacked both in the arm and groin, and when he left hospital he had by no means fully recovered the use of either limb.

"One very interesting case of spinal arachnitis occurred in a young man of twenty years of age. After going on well for a week he relapsed, but ultimately recovered. I could not say he was out of danger till the twenty-fourth day. He was treated with a prolonged salivation, together with repeated local bleedings and blisters.

"An interesting case occurred in a boy of ten years of age. He was affected with petechial fever of the lowest type, requiring wine from the very onset. As he recovered from this state it was observed he made no attempt to speak; this was

not particularly attended to for some days, but still as the fever went off it did not improve. The boy had no loss of speech before this illness. He understood what was said to him perfectly, but shook his head when asked why he did not speak. Under these circumstances his head was blistered, and he was ordered mercury in small doses. Precisely as the mineral took effect, in the same degree did his powers of speaking return, and he was well within a month.

Some cases of erysipelas, of diffuse phlegmon, and of puerperal fever, occurred, but they did not present anything peculiar. In one instance morbus coxæ set in with very acute symptoms, immediately after the fever, in a girl eleven years of age.

"On the whole, the epidemic, as it came under my observation, did not present anything different from former epidemics; while some features which they had were very rarely present in this one, as, for instance, gangrene of the extremities and nose, which seems to have been common in 1826, and still more so in 1817–18(*a*).

"As to the treatment a few lines will suffice. The nature of the fever was such generally as to call for a stimulating treatment. Hence wine was very extensively used, though not very largely; that is, the quantity was not large. In numerous instances it was ordered from the time of admission, and very rarely indeed had it to be countermanded. The usual quantity was four ounces in the twenty-four hours. With wine was joined, a day or two later, some liquid food, such as beef-tea, sometimes with rice mixed through it. In fact very many cases were literally fed through the fever. When, however, any special organ became engaged, I never hesitated, weak though the patient might be, to order leeching and blisters to the amount that appeared to be requisite. In this manner it was a very common practice to prescribe wine and

(*a*) "My friend Dr. Moss tells me that he saw three cases where gangrene attacked the nose. Two of these proved fatal. All came from the same house."

antiphlogistics at the same moment, and, as I believe, with the best effects. General bleeding, I may say, was not had recourse to at all. As constituting part of the stimulating line of treatment, it may be mentioned, that I made very considerable use of the class of medicines known as tonics, such as colombo, gentian, and bark ; carrying out, in this way, the experience of the older writers on fever, and making frequent use, besides, of those medicines which went by the name of 'alexipharmics.' This part of the subject is one of great importance, and it may fairly be questioned whether the views of the able writers alluded to are not made too little use of at the present day, and this simply because they are old.

" Unless where there were special reasons to contra-indicate them, emetics of ipecacuanha were generally used when relapse occurred, and benefit very usually appeared to follow their use. Opium I frequently used, particularly in the form of Dover's Powder, of course attending to those points in its use with which every one is now familiar; and it generally agreed well. During the first day or two of the fever it was not used. There was a certain class of cases, which, as they went on, assumed more or less the characters of irritative fever. They had a rapid, weak pulse, considerable heat of skin, furred but moist tongue; complained much of want of sleep; and had a general restlessness over them. Their state, in fact, was precisely what is seen usually in the secondary fever of small-pox, and, I may add, of scarlatina, for it also often exhibits the same. In such cases, ten grains of the powder, three times a-day, proved most useful, and it also had the advantage of keeping the bowels in proper order ; for the tendency to be too free was very marked through the greater part of the epidemic, particularly in the cases alluded to. In two instances, where the brain was much engaged, decided benefit followed the use of tartar emetic and opium, as recommended by Dr. Graves(*a*).

(*a*) " Dr. Carroll of Waterford speaks of having used opium largely in this same epidemic. Dublin Quarterly Journal, p. 99, Feb. 1849."

" Mercury I seldom employed in this fever, and not for what may be called its specific effects. As an aperient, and where it seemed to be called for, calomel was given in three or four grain doses; but this was seldom, if ever, repeated. If, however, it was little used in the simple fever, it was most largely employed in some of the complications, as in the cases of pneumonia, but, above all, in the diarrhœa and dysentery which prevailed so widely. Here the effects of the medicine were magical, and approached nearer to what might be called a specific than any other example I could give. It must be observed too that the mercury succeeded when every other means that could be devised had utterly failed. This I know was the experience of others, as well as my own. Of course it was not the only medicine used, but it would be out of place to speak farther of the others here. In conclusion, I may observe that, in the cases alluded to, wine was found to be much inferior to whisky; thus confirming curiously the remarks of Campion, Camden, and Borlase, all of whom wrote nearly three centuries ago"(*a*).

(*a*) [It would add to the statistical value of this Report were there data at our disposal from which even an approximation to the mortality arising out of the recent epidemic of fever could be arrived at; but we are not aware of any means by which this could be effected. The collected returns of the various hospitals, both permanent and temporary, the poorhouses, and the other eleemosynary institutions, could not possibly be obtained for a Report of this description. From some of the Dublin hospitals we have, however, received information worthy of being recorded.

Dr. Nalty has kindly procured us the following information with respect to the proceedings of the South Dublin Fever Committee. The number of cases admitted into the temporary fever hospital at Kilmainham, from its opening upon the 24th of June, 1847, till it was closed on the 29th July, 1848, was 6878; deaths 682. The number of beds provided at the Kilmainham establishment was 990, besides 180 supported at the Cork-street Fever Hospital, at the charge of the union, and some additional ones in Sir Patrick Dun's hospital. The number of fever patients admitted into Sir Patrick Dun's was, in 1847, 676, of whom 44 died; 185 were received in 1848, and of these 20 died. In Steevens's Hospital 88 cases of fever were treated in 1847–8, of which number but 3 died. The greatest number of patients in the Kilmainham sheds at any one period was 852, upon the 12th November, 1847. The average num-

Dr. Russell, of Enniskerry, County Wicklow, writes:

"The late epidemic prevailed to a considerable extent in this district, but the poor people were perhaps better prepared to meet it than in less favoured districts, as, though they suffered much from want of food, and also from food of a bad quality, yet there were not any cases of absolute starvation; however their privations gave rise to a considerable amount of diarrhœa, dysentery, and anasarca, and also some cases of purpura.

"The epidemic was, with two exceptions, confined to the poor, and nearly all were taken to the hospital.

"The relapsing fever was so severe in its attack, that they came into hospital at an early stage. Not so the maculated fever; as it was generally mild in its onset and progress for a

ber of days which each patient spent in hospital was twenty-four and a half; and the average cost of each patient a fraction more than ten pence per day.

In the union workhouses, as soon as fever appeared, the patients were transmitted to some of the neighbouring hospitals, or to the fever sheds.

From the Fever Hospital and House of Recovery, Cork-street, we have procured the following information. Admitted into the institution (tents and sheds included), from the 1st of January, 1847, to the 31st of December, 1848, both inclusive,—7250 cases, 3038 males and 4212 females; deaths, 566, of which number 263 were males and 303 females. 259 cases remained in hospital on the 31st December, 1847; and from that time to a similar date the next year 2376 cases were admitted, 955 males and 1421 females; the deaths of these latter were 197, 85 males and 112 females. See also Dr. Eustace's Report for 1847.

From the northern side of the city we have received the following return. The North Dublin Relief Committee opened hospital accommodation, at the Drumcondra sheds, for 594 patients, 264 males and 330 females, upon the 31st May, 1847, and closed them upon the 1st of July, 1848. The numbers treated in the North Union fever sheds during this period were 3047 males and 3074 females; of which number 474 died, 225 males and 249 females. The average number of days spent by each patient in hospital was twenty-three; the cost per diem, 10½*d.* On the 9th of October the greatest number of patients, 644, was in hospital.

From the governor of the House of Industry we have received the fol-

few days, they did not come into hospital until a late period of the disease, and consequently the mortality is heavy.

"On referring to the hospital registry I find that the epidemic commenced on the 3rd of February, 1847, and that the cases became of the average amount about the end of March, 1848. During this period 228 cases were received into hospital.

"We had 101 new cases of ordinary fever, of the simple continued character, with complications of bronchitis and pneumonia, being most prevalent.

"Ninety new cases of fever of an inflammatory type. Those fevers were of a peculiar character, being generally characterized by intense pain of head, back, and limbs, with a tendency to crisis on the seventh or ninth day, by profuse perspiration, and sometimes preceded by diarrhœa; this crisis being followed

lowing return: "In the Hardwicke Hospital, and the sheds attached thereto, there were, in 1847, 3240 cases, of these 1586 were males, and 1654 females, and 297 deaths; and in 1848, 2234 were admitted, 1114 males and 1120 females, of whom 210 died. The sheds were opened upon the 22nd April, and closed upon the 17th November, 1847."

Dr. Kirkpatrick, the senior medical attendant of the North Union Workhouse, has afforded us the following information: "The fever appeared in the North Union Workhouse upon the 3rd of March, 1847; during the ensuing three months 180 men were attacked, and 214 children (from seven to fifteen years of age), of whom 123 were boys, and 91 girls. The disease was at its height on the 12th of May, 1847. Only two deaths occurred in the Workhouse during the above period, most of the cases having been conveyed to the fever hospitals of the city. From this date till the 1st of August, the disease gradually abated. At this period, however, it began again to increase, and reached its maximum severity in December, seventy-two cases having occurred in the week terminating the first of that month. From the 1st October, 1847, to the 1st October, 1848, 703 cases of fever were removed from the union and auxiliary workhouses to the Glasnevin fever sheds. During that period eleven of the officers and paid attendants had the disease, of whom six died! They all had it very severely. Thus, of the entire staff of the institution, one-half had the disease, and more than one-fourth lost their lives. The nurses and assistants in the fever wards were all attacked; in almost every case there were one or more relapses, unless when the first attack was severe and protracted."—Ed.]

by a complete remission. But the most striking peculiarity (no matter what precautions were taken) was relapse on the fourth, or perhaps the eighth or ninth day, with aggravation of all the symptoms, which continued for four or five days, and terminated by profuse perspiration, which was again followed by complete remission. So certain was the relapse that it seemed part of the fever, which after a remission of four, or eight days *in a few instances*, was sure to return. In three instances there were two relapses; in one there were three, the last maculated. In a few cases there were small red spots like flea-bites. The complications were few, bronchitis and gastric derangement being the most prevalent. This epidemic was evidently contagious, as three assistant nurses were attacked, and had fever of the same character.

"As to treatment, I did not use any active measures, having bled in only two cases which were complicated with pneumonia. Leeches were seldom required, the head being relieved by cold applications and blisters. Gastric derangements, such as pain and vomiting, were treated with blisters, turpentine fomentations, or sinapisms. In some cases there was tenderness and fulness in the region of the spleen, which yielded to the same treatment.

"There were thirty-seven cases of maculated typhus, some of a very bad character. In one case the extremities were blue, and covered with purpura to a very considerable extent, being in irregular patches of many inches in circumference. The patient being night watchman in the house at Powerscourt, he was up every night, and continued to watch for five nights after the access of fever; he died on the fourth day after admission into hospital, the powers of life being too low to admit of reaction.

"As the other cases did not differ from ordinary maculated fever, I shall not make any remarks on them, further than to state that I found Dr. Graves's treatment with tartar emetic, and tartar emetic and tincture of opium, of signal service in such cases as

he describes. Many of these cases were not taken into hospital until a very late period of the disease, and consequently the mortality was heavy.

"Simple fever, with complications, 101 cases. Four deaths.

"Relapsing fever, with complications, 90 cases. Three deaths.

"Maculated fever, with complications, 37 cases. Five deaths."

Mr. Kelly has furnished us with the following remarks on the epidemic of fever at Mullingar:—

"In 1847, after a severe variolous epidemic, a fever of a most peculiar type developed itself, characterized by its mildness, relapses, and extremely contagious nature.

"In every case the accession was invariably well marked by an initial rigor, followed by universal soreness, with generally severe muscular and arthritic pains; on the third day profuse perspiration, with slight remission of the symptoms, occurred; and on the fifth day a crisis, either by vomiting, diarrhœa, perspiration, epistaxis, or a copious flow of urine, took place.

"The crises were almost invariably preceded by an exacerbation of the muscular and arthritic pains, of so severe a character, in most cases, that the patients were obliged to give vent to their feelings in the most pitiable cries.

"Between the twelfth and sixteenth days from the accession they invariably relapsed; the secondary crisis, similar in character and severity to the primary, occurring generally on the third day. Patients frequently relapsed so often as four times, with intervals of from five to eight days between each.

"One of the most anomalous symptoms of the epidemic, one which marked its true character (a famine fever), and impressed on the mind of the attendant the source and origin of the disease, was the importunate calls for food by all pauper patients, even during the first days of the attack.

"Another was its being acccompanied in most cases by severe muscular and arthritic pains, with copious perspirations,

which latter, although exceedingly acid when tested with litmus, yet did not evolve even the slightest odour of acidity.

"Its smell was peculiar, not fetid or heavy, but somewhat like burning straw with a musty odour; and, strange to say, there was not a single pauper in the workhouse, with whom I had any intercourse, that did not evolve a similar odour when heated by even the slightest exertion.

"Another extraordinary circumstance connected with the workhouse was the dry, hot state of skin of almost every individual in it during the prevalence of the epidemic, clearly indicating that the disease must have been incubating in the system of all the inmates, and that the slightest depression of the constitution, already at almost its lowest figure in the scale of resistance to morbid influences, would be sufficient to awaken the slumbering virus of the epidemic, and develope all the symptoms of the disease.

"It is a popular belief that an attack of fever once in a life shields the individual against a similar visitation again. In this epidemic, however, no such immunity was enjoyed by those who had passed through that ordeal, as I saw very many cases in which it was taken a second and even a third time that year, periods of from one to two months intervening between each attack.

"Another remarkable feature was its extremely contagious character, for if one individual of a family took it, in nine cases out of ten every other member of the household was quite certain to catch the disease.

"With respect to the use of mercury, I may remark, that when there appeared an almost total cessation of the function of secretion I gave a very fair trial to the hydrargyrum cum cretâ, but it did not appear to exert much control over such cases. Its combination with Dover's Powder and dried carbonate of soda was, however, most valuable in bowel complications, more especially when accompanied by dry tongue and epigastric tenderness.

"It was also most valuable in the catarrhal complications of old subjects, combined with ipecacuanha, and administered with ammonia.

"I cannot charge my memory with having seen a single case of death from the epidemic in its uncomplicated state; the fatal cases were produced either by complications or typhus. All the members of one family in particular, named Reddy, were completely cut off by relapsing typhus. They lived in a bog, were very comfortable, and were not in any manner exposed to contagion. The eldest son first took it and died; next the mother, who was brought into the temporary hospital; she died; the second eldest son then caught it, came into hospital, had a crisis on the twelfth day, and left on the eighteenth, apparently convalescent; caught cold at a funeral the day he left, relapsed, and died at home. His sister, who was living in England, came to see him; she took it and died; and a neighbour of their's named Hope, who at times went to see them, also took it and died. The house was then razed, and the mortality ceased."

Dr. Hudson, of Navan, County Meath, has furnished us with the following Report:

"I am not aware that there was anything unusual in the state of health of this district previously to the outbreak of dysentery and fever in 1847. On the 1st of January there were but twenty-six patients in the Navan Fever Hospital; this number was early in the following summer increased to upwards of fifty; and the entire number treated during the year amounted to 1232, an increase of more than 900 over the preceding year.

"Besides the permanent hospital, there were also opened two temporary fever hospitals in the neighbourhood, into which a great number of patients were received in the years 1847 and 1848.

"Dysentery preceded the general outbreak of fever here, and in the spring of 1847 was very fatal; many of the poor

died in their houses, and in the month of March four patients died in the hospital of this disease. After this period we met it more usually in the relapse from fever; and at a still later period it seemed to give way to diarrhœa and the other phenomena of dothinenteritis.

"On the character of the prevailing epidemic becoming decided it was evident that it had no features in common with infectious typhus, or with our endemic typhoid fever. Neither was it, in this part of the country, a perfectly new form of fever; I had been familiar with it since the year 1845, when the same disease was pretty generally epidemic here. It had been prevalent in Scotland in 1843–4, and I perceive that Dr. Lynch of Loughrea dates its appearance in Galway so early as the former year.

"Its points of difference from our ordinary typhus are striking, and have been well put forward by Dr. Frazer in his short account of the epidemic as it appeared in Dublin: sudden and severe in its invasion; short in its duration; abrupt in its termination; almost certain to return after an interval of four or eight days, in defiance of all precautions; presenting none of the cerebral disturbance of typhus, but attended frequently with vomiting; and presenting an appearance of skin, not only not characteristic of the other, but strikingly peculiar to itself.

"If farther distinctive characters were wanting, I would add, from my own observation, that the late epidemic was a well-marked *remittent;* and that, believing typhus to be one of those specific contagions which are *generally* suffered only once in a lifetime, I cannot acknowledge its identity with a disease the subjects of which afterwards contracted typhus in twelve instances, under my own observation, within the year.

"One of these was in the person of a physician in this county, who was much exposed to fatigue and fever in his attendance upon several public institutions. He first suffered a most severe attack of the yellow remittent form of the epidemic. After a tedious recovery he left home for some weeks, and on

his return resumed his attendance upon the fever hospital and sheds; about a month elapsed when he was again knocked down, this time with exanthematous typhus. Nothing could be more striking than the contrast between these two attacks: the first marked by much abdominal congestion, jaundice, a torpor almost amounting to coma, low temperature, profound prostration, &c.; the other a purely active and sthenic disease, attended with a copious measly eruption, and with a good deal of delirium, but with none of the alarming adynamic symptoms of the first illness.

"Of the hospital patients whom I attended in the two attacks, two had the epidemic in July, and were again admitted in typhus in November.

"While these were convalescent, four patients were discharged cured of the epidemic, and were each re-admitted in a few days in typhus, having, I presume, contracted the disease in the convalescent wards. Additional proof of infection so communicated was afforded by three others, who, after recovering from the epidemic, sickened of typhus while in the convalescent wards, and were removed again to the fever wards. In several other instances I only witnessed the second attack.

"For several months previous to the occurrence of these cases, not a single case of typhus had been admitted into the hospital; and although such were carefully discriminated from the epidemic, and noted in the registry, I find only seventeen entered as admitted during the year.

"Though I consider the epidemic to have been equally distinct in its nature from endemic typhoid fever,—the non-infectious fever arising from certain kinds of malaria,—I must admit that the pathology of the secondary period closely resembled this affection. There were the same expression of face, the same dry, contracted tongue, the same globular distention of the cæcum, gurgling over the ileo-cæcal valve, ochre-coloured liquid stools, and the thinly scattered, rose-coloured, elliptical spots over the chest and abdomen; and in several fatal cases we found, on dissection, the same ulceration of Peyer's

glands as in dothinenteritis. It is, however, to be borne in mind that such are also the phenomena of *relapse* after typhus or any other kind of fever. We do not see typhus relapse into typhus (I, at least, have never seen it occur), but into a secondary fever, now of an irritative, now of a typhoid kind, which Dr. Cheyne long since showed to depend upon dothinenteritis.

"To detail the history of this epidemic would be a needless repetition of what has been so often written. Here, as in other places, it was sudden and severe in its onset, attended with violent headach and general muscular pains, and, in many patients, by oppression of the præcordia and vomiting of green fluid. It most generally terminated on the sixth or eighth day by copious sweating, or by diarrhœa, or occasionally by epistaxis, by which crisis, in some cases, the balance of the circulation was perfectly restored, and the convalescence completed; while in others, visceral congestion, especially of the spleen, continued, and at the end of four or eight days the fever of relapse commenced, in some terminating again in a few days by a second crisis, while in others it became complicated by different lesions of the intestinal mucous membrane and glands, of the solid viscera, and in some cases of the lungs (tuberculosis). The pathology of the primary attack—congestion of the splanchnic viscera—was usually manifested by the feeling of oppression at the præcordia, with or without green vomiting, by epistaxis, and by a yellow tinge of the skin, varying from a straw-colour to a very deep jaundice. The epistaxis was rarely, if ever, met with, except in connexion with congested spleen; and the hue of skin was, I think, sometimes attributable to this cause, though, no doubt, more frequently the direct effect of the action of the fever-poison on the blood.

"I would refer to Dr. Cormack's excellent account of this fever, as it appeared in Scotland in 1843, for an examination of the different theories of this phenomenon; but while I think he fully sustains his opinion,—that it is a direct effect of the

fever-poison,—he does not attach sufficient importance to the effect of a stasis of blood in any solid organ upon the physical qualities of the mass of circulating fluid, as witnessed in the yellow hue of patients affected with hepatization of the lung, protracted ague, or with enlarged spleen, &c. By some high authorities this appearance is ascribed to inflammation of the liver or duodenum; in other words, it is looked upon as a true jaundice. A very few of the cases which I met with in 1847–48 supported this view. In one deeply jaundiced case, in which there was frequent, but not very copious discharge of blood from the bowels, the liver, more especially its left lobe, was enlarged, and very tender to the touch, a condition which yielded only to the full action of mercury.

"Another (fatal) case, in which the colour of the skin was a dusky olive, was attended with black vomit, under which the patient sank in a few hours after admission, and before any accurate history could be obtained. Dissection discovered in the stomach a large quantity of the same grumous matter which had been vomited, with some congestion of its mucous membrane, an enormously enlarged liver, coated with lymph, and already somewhat puckered and rounded at its edges by the prolongation (and subsequent contraction) of bands of lymph from the surface into the interior of the organ. There could be no doubt that this plastic inflammation of the liver had preceded the febrile attack, and had produced the fatal hæmatemesis.

"The above were nearly the only instances in which the hue of the skin could in any way be traced to gastro-hepatic inflammation, among the many hundreds of patients presenting it during the year.

"Relapse occurred so frequently (for some time so constantly), and in spite of such varied precautions, that I felt the greatest anxiety to ascertain the pathological condition upon which it depended. The only link I could ever discover between first and second seizures was a congested state of the

spleen. In cases in which epistaxis occurred after crisis, and was accompanied by a sallow hue of the surface, and a peculiar violet or lead-coloured tinge in the colour of the substance of the tongue, we never failed to discover a space extending from two to four fingers in breadth over the angles of the lower ribs, which yielded a dull sound on percussion, and was sometimes tender on pressure. I do not recollect such an instance in which relapse did not surely follow. I am strongly of opinion that more or less splenic congestion existed in every case in which relapse did occur, and that this was the true *nidus* or point of irritation on which it depended. It was in these cases more especially that the remittent type became distinctly marked, and the more so the longer the disease continued; and in several instances during the epidemic I witnessed the change of this into a well-defined intermittent before the complete recovery of the patient.

"I have no means of comparing the mortality in the hospital with that of the district generally. In hospital, 1 in 29 of those affected with the epidemic died; nearly all during the second attack, or in some of its sequelæ. Of these dothinenteritis and dysentery carried off the greater number, several ran into acute phthisis, and a few sank under copious hemorrhage from the gastro-intestinal mucous membrane. In some of the fatal cases of dothinenteritis the rapid and painful collapse before death exactly resembled that of peritonitis from perforation, but in no instance was this lesion found. Extensive ulceration of the mucous membrane and follicles of the ileum and cæcum existed in all the fatal cases which I examined.

"One of the most remarkable characters of the secondary fever was its tendency to run into acute tuberculosis. Although notes of individual cases are not suited to this report, I am tempted to subjoin the following short account of one, interesting from the rapidity with which this occurred:—The patient, a fair-haired young man, aged 18, previously healthy, was admitted into hospital on the fourth day of fever. On the

eighth day he had a sweating crisis, and rapidly became convalescent. Eight days afterwards he relapsed, and for the first time since his admission he had cough (without expectoration). No signs of any pulmonary affection being discoverable, the cough was treated as a catarrhal one, by leeches to the trachea and small doses of tartar emetic in a mucilaginous mixture. On the third day of the relapse he had copious epistaxis, and this led to a careful examination of the region of the spleen, and to the discovery of a considerable enlargement of this organ. On the fourth and fifth days the epistaxis recurred, and the dulness had extended as high as the scapula. The respiratory murmur was feeble and interrupted, and both inspiration and expiration were accompanied by a sibilant râle. It was also noted that the heart's sounds were heard very distinctly in the upper portion of the left side. I had no doubt that this was a case of acute phthisis, but I was not prepared for the very rapid termination which occurred early on the morning of the seventh day of relapse.

"On examination after death the heart was found displaced fully two inches by an enlarged spleen. This latter organ weighed two pounds fourteen ounces. It was of a dark purple colour, coated with patches of a substance resembling fibrine, and containing, internally, numerous masses of tubercular matter of various sizes. The whole of the left lung was of a dark violet colour externally, the upper portion crepitant; the whole of the lower lobe was hepatized, red, and friable; part of the posterior upper portion congested, resembling the first stage of pneumonia. On washing away the contained blood the lower lobe became of a greyish colour, and its section showed aggregated minute granules, each scarcely larger than a pin's point.

"The glands of the ileum were enlarged, tumid, and in some instances ulcerated. The mesenteric glands were congested, and contained a whitish deposit. I submitted a portion of each of these viscera to my friend, Dr. Aldridge, for micro-

scopic examination, and he informed me that in none was there any product of inflammation, but that the deposit in all was of a tubercular nature.

" In other cases the progress was slower, and the tuberculosis was found on dissection to be more advanced. In one the small masses of tubercle with which the spleen was thickly studded (so as to exactly resemble a lung studded with softened tubercles) were, many of them, of the consistence of pus.

" I have little to record on the subject of treatment. The first stage required little interference; occasionally a few leeches to the mastoid process relieved the headach, and the green vomiting was often checked by a few applied to the epigastrium, or by a small blister, with the internal exhibition of small doses of calomel. The diarrhœa and dysentery of the second stage too often resisted all treatment. In some cases leeching and blistering over the cæcum, with the internal use of mucilage and sedatives, succeeded; sometimes the application of mercurial ointment over this part seemed useful, but I cannot say that I ever saw any good effect from the internal use of mercury in these affections.

" I very soon experienced the inefficacy of the mineral astringents, acetate of lead, nitrate of silver, and sulphate of copper, whether exhibited by the mouth or by enema. No astringent had so good an effect in my hands as oil of turpentine, in doses of six or eight minims, given in emulsion.

" Several medical friends who, like myself, were disappointed with the mineral astringents, tried the turpentine at my suggestion, and all report favourably of it. One of them, who had charge of a large temporary hospital, informed me that in some tedious cases he found advantage from changing the form of exhibition, and giving Chio turpentine in pills.

" In many cases of protracted convalescence with enlarged spleen, I employed repeated dry cupping over this organ with advantage; and in some cases, where tenderness or pain was present, I also abstracted a little blood by this means.

"I never saw any good effect from quina given alone, whether before or after relapse; but in several cases in which a tedious remittent lingered on, I succeeded in cutting it short by a combination of five grains of sulphate of quina with five grains of sulphate of iron, given every twelve hours. With the exception of one tubercular case, this plan succeeded in every instance, and sometimes required to be but once repeated. Of course it was never given when contra-indicated by intestinal irritation. I also gave Bewley and Evans' effervescing solution of citrate of iron, with excellent results, in some of these tedious cases where splenic enlargement existed.

"It is worthy of remark that occasionally the immediate effect of the large dose of quina and iron was to produce the change of the remittent into intermittent, to which I have before alluded.

"I did not meet with anasarca in more than two or three individuals as a sequela, but rheumatic pains were very frequent, and were in general quickly relieved by hydriodate of potash. Bed-sores were by no means frequent."

Of the epidemic at Trim, Dr. Jones Lamprey writes:

"I have drawn up the following report on the epidemic fever prevalent at Trim in the years 1847–48, in as concise a form as possible, from notes collected during a period of some months that I acted as medical officer to the County Meath Gaol, County and Relief Committee fever hospitals, and Trim Union Workhouse, as well as from an extensive domiciliary practice amongst the poor of the surrounding neighbourhood.

"The district with which these institutions are mostly connected is situated in the centre of one of the wealthiest and comparatively least populated counties of Ireland; it extends over a space thirteen miles long by three or four broad, and comprises the two electoral divisions of Trim and Kilcooly, averaging a population of 13,000.

"The people of this county are generally well housed, comfortably clad, and, being principally engaged in pastoral

pursuits, are not so much dependant on agricultural resources. Hence the failure of the potato crop,—moreover, not altogether complete in this locality,—was not attended with the same consequences, nor did the people exhibit the same aspect as those living in other famine-stricken districts; but, notwithstanding all these advantages, disease was very prevalent, and assumed a most decided character.

"A disease had also been prevalent among the cattle, which was described to me as being similar to the 'pleuro-pneumonia' that had been decimating the horned cattle for some years previously.

"In describing this epidemic fever, I am under the necessity of classifying the variety of forms in which it appeared in the order of their most frequent occurrence: 1st. Simple continued; 2nd. Typhoid; 3rd. Gastro-bilious or jaundice; and 4th. Typhus; and though such an arrangement may be objected to by those who do not admit so precise a classification of fever in general, still, as a wide difference was visible in the cases when lying side by side in the hospital, such distinction, though perhaps not strictly scientific, was useful as a guide to treatment.

"The form that the majority of cases of this epidemic assumed was that of the simple continued fever, the periods of attack generally lasting nine days, and terminating on the ninth day with a critical perspiration, which was always preceded by a secondary rigor. The attack in most cases was not severe, nor attended with complications, unless in those instances where the patient had been dosed with sulphate of magnesia or castor oil, which usually gave rise to some gastro-enteric symptoms, and more or less prolonged its ordinary duration.

"A rigor marked its invasion, and the 'pains in the bones, and headach,' with much prostration and loss of appetite, made the patient aware that he had 'the sickness.' On examining him we found his countenance congested; conjunctivæ suffused; tongue furred and white; skin hot; pulse 120, and inflam-

matory; and the bowels constipated for three or four days previously. Excessive headach, and constant thirst for cold water, were the most constant symptoms during the attack. Its most remarkable features consisted in an insatiable hunger that followed the crisis, and the constant relapses that took place in defiance of all precautions; the sequelæ that I have observed were rheumatic pains, particularly of the upper extremities, and dropsical infiltration of the lower, especially among females. Iritis occurred in two individuals, and parotid abscess took place in a third.

" The treatment that I was in the habit of adopting in these cases consisted in having the head shaved or the hair cut close, and administering a bolus of calomel, ipecacuanha, and rhubarb; and if the pain in the head continued severe, the application of a few leeches (generally one to each temple was found sufficient) gave great relief, followed by cold applications to the forehead; a few grains of hydrargyrum cum cretâ, with ipecacuanha, given two or three times a day for a couple of days, the use of a diaphoretic mixture, and allowing the patient to drink freely of cold spring water. Blistering the head or neck only increased the suffering, and added to the inflammatory action of the fever. This treatment was found sufficient to relieve the head, diminish the heat of the skin, and lower the pulse.

" No matter how urgent the symptoms, or how favourable the appearances were for general bleeding or the use of tartar emetic, the prostration that ensued after these remedies were tried was so great, that I no longer used them, as the few that I thus treated required most expensive stimulants to support them through the attack, the period of which was protracted; convalescence was slow, nor did such practice insure them from the usual tendency to relapse. I very frequently succeeded in cutting short the relapse by timely administering an emetic of ipecacuanha.

" The typhoid form was the next in order of frequency;

the period of attack lasted twenty-one days, and generally occurred in broken down constitutions, and in persons beyond the middle age. Its symptoms commenced slowly, and did not present much uniformity. The skin was generally hot, dry, and chaffy, and covered with maculæ, which at first were with difficulty distinguished from ordinary flea-bites; but in the latter stages of the disease, when there was failure of the circulation, they assumed a darker colour and more diffused outline; the pulse, always weak, was sometimes quick, at other times slow, and particularly towards the latter stage it became faltering and irregular; sordes collected on the teeth, gums, and lips; the tongue, dry and concave, covered with a glazed brown crust, remarkably fissured in most instances, its margin sometimes moist (a favourable sign); urine dark and scanty; the excretions from the bowels also scanty and vitiated; countenance inanimate; circulation indicating great weakness; cerebral depression; semi-comatoseness; and not unfrequently subsultus.

"There was sometimes a considerable amount of epigastric tenderness, but for the most part there were no symptoms present that denoted the existence of any organic lesion.

"These cases usually recovered on the twenty-first day of the attack, by merely exhibiting a marked improvement in the symptoms, which progressed slowly to perfect convalescence, without the occurrence of any marked crisis, unless the return of the secretions could be considered as critical. The patients became very much emaciated. Relapses frequently occurred, but not until a long interval had elapsed after the primary attack.

"The treatment I found to answer in these cases consisted principally in sponging the surface of the body with tepid water, giving mild diaphoretics, and aperient enemata in the earlier stages of the disease. Subsequently, the circulation was the principal guide to treatment; when it required a stimulus, a blister to the occiput did much service, besides the free use of wine and carbonate of ammonia.

" The third form of this epidemic, to which the term gastro-bilious or jaundice fever may not be inapplicable, presented many differential marks from the preceding ones; and, though occurring like the ordinary simple continued fever, it was afterwards to be distinguished from it by the dark jaundiced colour that the skin and conjunctivæ assumed about the fourth or fifth day. There were always great pain in the gastric and hepatic regions, also in the eye-balls and forehead; bilious vomitings and hiccough (vomiting of black matter had occurred in one aggravated case that came under my notice); dark fetid discharges passed from the bowels; black sordes collected on the lips, gums, and teeth, and also coated the tongue; breath very offensive; frequently cerebral depression; pulse at first inflammatory, varied from 100 to 150: profuse perspirations, though not decidedly critical, occurred on the seventh, eighth, ninth, to the fifteenth day, which required instant checking on account of the alarming prostration that ensued.

" Some of these cases terminated most remarkably; one man, whilst sitting up in his bed, taking a drink, fell back, and immediately expired, though at the time he was sufficiently strong to support and help himself: two or three others died in an almost similarly sudden manner.

" The jaundiced appearance of the skin continued for a long time during convalescence, which was slow. These patients seldom relapsed; and all, with the exception of those before alluded to, did well. I had not the opportunity of examining these cases that proved fatal. There was one well-marked example of this form of fever being communicated by contagion.

" The treatment that I employed in such cases consisted in applying a few leeches to the epigastrium; three or four were generally found to be sufficient, as it was remarked that the leech-bites continued bleeding for several days. I then applied a large blister over the gastric and hepatic regions, and dressed it with mercurial ointment. Small doses of hydrargyrum cum cretâ and ipecacuanha were administered internally

every first or second hour, until there was an amendment, and aperient enemata were used when the bowels required them. On the commencement of the perspirations, I found a mixture containing quina and nitric ether of great use in checking them, by acting as an astringent and diuretic.

" The next form that I observed was the typhus fever. Though of comparatively rare occurrence (being in the proportion of four per cent. to the others), it was characterized by commencing with rigor, considerable headach, and great prostration; the presence of diarrhœa; an irritative cough; suffused eyes; and, after the lapse of two or three days, the appearance of an exanthematous-like eruption (petechiæ). The head symptoms increased; there was frequently delirium, great restlessness, stupor, coma, and peculiar nervous agitation of the upper extremities; bronchitic râles were heard in the lungs; the heart's action varied according to the stage of the disease; towards the latter stage its action became rapidly vibratory; the tongue was dry and furred. On examining the abdomen there was generally some epigastric tenderness, and over the region occupied by the cæcum there was always a peculiar fine crepitus perceived, resembling that felt on handling tissue paper, indicating the existence of dothinenteric complication. These cases generally resolved themselves on the twelfth, fifteenth, or twentieth day after attack, by crisis of perspiration Relapses following the simple continued form frequently assumed the characters of the well-marked typhus, but the change of character from that of the primary fever was mostly to be attributed to contact with typhus cases.

" The treatment of these cases, which lasted for such a lengthened period, was necessarily modified and altered according to circumstances, but was principally determined by the condition of the pulse, as in the typhoid form, which denoted the use of stimulants, or the reverse. Port wine was largely used when delirious restlessness was present. The antimonial

treatment originated by Dr. Graves answered in restoring the nervous system to a quiet and composed state.

"Where the petechiæ were of a very dark colour, or threatening to run into a putrid condition, I have found the exhibition of yeast, in combination with camphor and nitric ether, of great service in staying the septic process, besides acting as a powerful stimulant(*a*).

"The following list shows the relative frequency of the four forms of fever occurring in this epidemic, which I have described:—Of 100 cases, there were of simple continued fever, thirty-five; typhoid, twenty-three; gastro-bilious, or jaundice, eighteen; and typhus, four.

"The principal circumstances conspiring to make this epidemic so prevalent were the congregation of a large number of poor people together, either for the purpose of seeking aid from the Relief Committees, or waiting for the distribution of food at the relief depôts. Many owe their illness to contact with the poor collected on these occasions(*b*). But by far the chief agent in propagating it (perhaps the origin of the epidemic is

(*a*) "I cannot speak too highly of the stimulating and antiseptic properties of this mixture. I have seen it remove the dark, livid hue of the skin in this form of fever within a few hours; and, as another proof of its antiseptic powers, I found that, on administering it in cases of dysentery attended with great fetor of the dejecta, it speedily removed all odour, and, at the same time, rather counteracted the frequency of the discharges from the bowels. The following is the formula I used:

R. Cerevisiæ fermenti, ℥x.
Camphoræ, ℥ss.
Ætheris Nitrici, ℥iv. Misce.

An ounce to be taken every hour, or every second or third hour.

"The mixture soon becomes so agreeable to the palates of the patients, that it is necessary to keep it concealed from them, for fear of their making 'too free' a use of it."

(*b*) "I understand that the late Dr. Clifford attributed his fatal illness (typhus fever) to this cause, and dated the accession of his attack from one day's laborious duties at one of the meetings of the Relief Committee."

due to the same cause) was the constant practice that the people of the western and more stricken counties had of migrating towards the eastern parts of the island. These poor creatures, obliged from their poverty to sleep in the open air, in ditches and other wretched places, carried the fever, at that time more prevalent in the west, in their own persons, and, mixing with the people attending markets or fairs, for the purpose of begging, imparted the disease to them. I have often observed whole families belonging to distant counties lying in fever on the road side.

" The complications observed in this epidemic were mostly cerebral and abdominal; there were but few cases of affections of the thoracic organs.

" If I had previously any doubt as to the highly contagious nature of the epidemic, it would have been immediately removed by the following circumstance:

" A wretched house in the town of Trim, which had been used as a place for accommodating poor travellers with lodging, soon became notorious on account of the number of persons that sickened in it, as all those who made it their temporary abode were attacked with fever, and many cases received into the hospitals were derived from this house, which, in short, was a focus of contagion. This became so remarkable, that some members of the Relief Committee interfered, and had it cleansed, and prevailed on the owners to cease admitting any more people to lodge. No doubt the interior was very miserable, and almost sufficient to have been a source of fever in itself, but there were many other houses equally miserable and wretched, and even used for the same purpose, without having any of their inmates attacked with the epidemic"(*a*).

(*a*) " In addition to the ' central punctum,' which has been described by Dr. Lalor as a useful diagnostic in determining whether the maculæ were those of flea-bites or of fever, I have found that if the shirts of the patients presented the appearance of blood dots, it was conclusive that the ' maculæ'

The history of the progress of fever throughout the County Wexford has been collected for us by Dr. Boxwell, and is thus detailed from the reports furnished him by Drs. Lang, Carroll, Goodison, Carey, and Long.

The disease was very prevalent in Arthurstown, Ross, Enniscorthy, Newtownbarry, Wexford, and Killan; and although the general health of the community was tolerably good previously, diarrhœa and dysentery prevailed at Arthurstown and Killan, in both of which places the epidemic fever broke out in April, 1847, but did not appear generally throughout the county until the May following. The lower orders, and those debilitated and broken down by hardships previously experienced, appear to have been the persons who suffered most. There does not appear to have been much actual starvation in the County Wexford, and therefore the medical men are unable to give any satisfactory answer with respect to the seventh and eighth queries of our Circular, with the exception of Dr. Long, who reports that purpura and scurvy were well marked at Arthurstown. There was a very general attack of pleuro-pneumonia among cattle throughout this county in 1845, 1846, and 1847.

The average age at which persons were attacked was 25, and females were more frequently the subjects of fever than males. All the reports from the County Wexford agree as to the contagious nature of the disease, and state that the fever was much more violent and fatal in the upper classes of society than in the lower, but that the latter were slower in recovery, and required a more stimulant plan of treatment. The fever among the lower order was also characterized in this county by a tendency to relapse. In Dr. Carey's report from Newtownbarry, it is stated, that typhoid symptoms fol-

were caused by fleas. The reason of this is obvious, and a knowledge of the fact has often determined the nature of the eruption where the puncta could not be found."

lowed the starvation state about the fifth day; in Wexford they occurred about the third. All the reports from this county agree in stating that this fever was characterized by its brevity and great tendency to relapse. Dr. Carroll, of Ross, however, says, that in his neighbourhood there was, in addition to the relapse a greater amount of typhoid symptoms than usual.

To the eighteenth and nineteenth queries, as to the prevalence of purpuric spots and the occurrence of crisis, the answers are all in the negative. Dysentery prevailed extensively; and in Enniscorthy, Dr. Goodison says, more died of it than of fever, which it generally followed. The local complications were, at New Ross, chiefly gastro-enteric; at Newtownbarry, affections of the chest; at Wexford, those of the chest and head; and at Enniscorthy and Killan, those of the head and the gastro-intestinal mucous membrane. The difference between the primary and relapsed cases, in this county, chiefly consisted in the fact, that the latter were characterized by greater weakness, and were not maculated. All the returns agree in stating, that petechiæ never appeared in the relapse when they did not occur in the primary fever. At Newtownbarry, epistaxis, in the early stage, was often attended with relief. At Killan this symptom was frequent towards the latter stages, when it proved very untoward. Bed-sores were very infrequent. At Enniscorthy and Wexford the mortality was much greater among the higher orders. Generally speaking, the mortality was greater among those attended at their own houses than in hospital, and, therefore, the rural districts suffered most. We have no record of any *post mortem* examinations.

With respect to the duration of the disease, fifteen days seems to have been about the usual period, except in Newtownbarry, where it did not exceed ten. The convalescence, in most instances, was from ten to fourteen days. The most remarkable peculiarity in those primary cases which were subsequently followed by relapse, was, that the fever was not

well marked, and that, in some instances, there was greater weakness.

The usual sequelæ of this fever were anasarca, rheumatism, and dysentery. With respect to treatment, stimulants appear to have been used extensively, and in considerable quantities, consisting of wine, punch, ammonia, &c. Local depletion was occasionally had recourse to, but it does not appear from the returns that general bleeding was ever resorted to. Mercury was employed to meet local complications, particularly when the lungs and bowels were affected. Opium, in the form of Dover's Powder, was occasionally had recourse to, and also used with marked benefit, in combination with tartar emetic, in some cases where the head was much affected.

Report from Dr. Falkiner, of Kilcullen, county of Kildare:

"Fever, as it has come under my notice, in this locality, within the last two years, has presented two distinct forms, differing no less in the symptoms, progress, and treatment, than in the class of the community from which the subjects of each were selected.

"The first, the often described and easily recognised typhus, endemic in Ireland,—which was met with almost exclusively amongst the farmers and mechanics, and persons who were not exposed to much privation,—the cases of which have been comparatively few, and have, generally speaking, presented nothing remarkable.

"The second, which may be called the famine fever, made its appearance early in the spring of 1847; it was first met with in those situations where poverty and filth most abounded, namely, in the villages, and amongst the inhabitants of the commonages which are scattered all over this locality; but it soon spread through the intermediate districts, and presented some peculiarities, the most prominent of which I subjoin.

"First, the widely-extended range taken with regard to age, no period of life seeming to be exempted, as well-marked spe-

cimens of the disease were frequently met with in children under five years of age, and again in persons of more than ninety, and of both sexes. The number of females attacked exceeded that of the males in the ratio of nearly three to two. The tendency to relapse, which occurred in at least one-half of the cases, was most common at the beginning of convalescence, though it occurred at all stages. Violent cerebral symptoms were seldom encountered, and dysentery or diarrhœa was not commonly found to precede, accompany, or follow the disease, but pulmonary complications (chiefly pneumonia and bronchitis) were very frequent and intractable, in consequence of the debilitated state of the sufferers. Pleuro-pneumonia was at the same time prevalent amongst the cattle, but not generally so. Crisis occurred but seldom, and, when present, was generally marked by epistaxis. Neither petechiæ nor purpura were very common, though both were occasionally met with; and I cannot call to mind any case in which either appeared, for the first time, after relapse. Generally speaking, neither bed-sores nor congestion of the surface were usual. The term of convalescence varied from fourteen to twenty-one days, except in those cases where relapse occurred.

"The most usual sequelæ were anasarca and scrofulous affections, under various forms, but chiefly ophthalmia and enlargement of the cervical and other glands.

"In cases not complicated, dietetic treatment, carefully regulated, together with alteratives, was found to be most effectual, not alone in removing the disease, but also as prophylactic of relapse. Stimulants, except of the diffusible kind, were generally contra-indicated by the prevalence of pulmonary complications.

"General bleeding was never resorted to, except in a very few cases; and local depletion was not often called for, unless for the relief of chest affections. Mercurial alteratives were often exhibited, and the milder preparations were frequently

used, in combination with antimonials, expectorants, and sedatives, in the treatment of such complications.

"Opium was often exhibited, chiefly in cases of hyper-secretion by the mucous membranes, whether bronchial or intestinal, and, in some few cases, in combination with tartar emetic given in camphor mixture, under such circumstances as Dr. Graves recommends it, and in which cases the results have been most satisfactory. The mortality, as compared with the number subjected to treatment, has been one in twenty-seven."

[With the Appendix, containing reports which were forwarded too late for insertion in their proper places, viz., those of Drs. Callanan and Popham of Cork, Dr. Cronin of Cove, Dr. Seaton Reid of Belfast, and Dr. Knox of Strangford, county of Down, and also the General Summary and tabular views exhibiting the progress, &c., of the epidemic, we will conclude the subject in our next Number.]

Art. II.—*On Cervical Abscesses, the Accidents which sometimes attend their Treatment in reference to Hemorrhage;—And a new Operation for securing the common Carotid Artery.* By William Hargrave, M. B., Professor of Surgery in the Royal College of Surgeons in Ireland, and Surgeon to the City of Dublin Hospital.

On examining the surgical anatomy of the neck we are forcibly impressed with the importance of this region in a practical consideration of the great liability there is of hemorrhage occurring as a sequence to many of the diseases which have their locality in this situation. This liability proceeds not alone from the arteries and veins of the second and third class, but also from the more minute vessels which traverse this region in

such numbers in almost every direction, and which are liable to be opened directly by the surgeon when operating, or sometimes indirectly by ulcerative absorption.

Ulceration is a very frequent cause of hemorrhage in the neck, and arises from such accidents as burns and scalds, from the injudicious application of vesicatories, or from vessels communicating by this process with the cavities of abscesses, either before or after being opened; showing itself, in the first case, immediately on the abscess being opened; in the second, not declaring itself till some days after the contents of it have been evacuated.

In consequence of the improved spirit which now actuates practitioners, of more readily giving to the profession the results of their experience, whether successful or otherwise, we are in possession of some valuable pathological facts bearing on the question of hemorrhage occurring in the neck, and also in the mouth and fauces from tonsillitic affections, owing either to ulceration taking place in the vessels, or from what may be termed secondary ulceration after an abscess has been opened.

Before entering into the details of the following case of hemorrhage from an abscess in the neck, and the practice demanded by it, I shall recapitulate the results of the recorded practice in reference to this occurrence.

Three cases of death following in a very short period from one or other of these causes have been published:

I. An abscess formed on the right side of the neck in a young child; a peculiar thrill and tremor was observed in it; after much deliberation it was punctured, pus mixed with blood flowed from it, then pure blood; the orifice was closed: the child died that evening. The *post mortem* examination exhibited a cribriform communication between the abscess and the external jugular vein(*a*).

II. A remarkable case occurred in the practice of the late

(*a*) Medical Gazette, May 10, 1844, vol. ii. N. S., p. 206.

Mr. Liston, who punctured an abscess on the right side of the neck, with which the common carotid artery had communicated. The vessel was secured low down in the neck. The patient dying of arterial hemorrhage on the fifteenth day, the artery was found to have opened into the abscess. In the paper detailing these circumstances, Mr. Liston mentions three instances of communications between large arteries and abscesses. Three other examples of arterial openings in cavities of this description have been recorded by Mr. Partridge(*a*).

III. An abscess formed spontaneously in the neck five months before death; a white purulent discharge from a fistulous opening in the supra-sternal fossa remained, from which arterial hemorrhage occurred; it was arrested by compression, but returned on this means being discontinued. The patient sunk in forty-eight hours from the first invasion of the bleeding. The *post mortem* examination exhibited an old abscess of a large size, occupying the front of the neck below the larynx, and extending behind the sternum to the right of the arch of the aorta; also a right lateral extension between the right bronchus and arteria innominata to the spine, which, however, was not diseased. The external cellular coat of the aorta and arteria innominata was removed, the fibrous one to some extent; in the centre of it a lacerated opening, about a quarter of an inch long, was found, which penetrated the lining membrane(*b*).

When abscesses form in the tonsils I have witnessed most alarming hemorrhage follow their opening, even when performed with every care, but in no instance has death occurred. In examining the vascular relations of these glands to explain such an occurrence, they present us with three varieties, two of which will afford such hemorrhage as may or may not be fatal; the third, I presume, will always prove so. Under the first head we find the tonsillitic arterial circle, which, if wounded in

(*a*) Lancet, vol. i., p. 864, 1841–2. (*b*) Lancet, July 11, 1846, p. 44.

opening the abscess, will often give an active flow of blood. The next source from which we should be prepared for a serious loss of blood is the inferior or ascending pharyngeal artery, which creeps to the base of the cranium, close to and external to the tonsil. I feel satisfied that, in one case of very alarming hemorrhage which I witnessed, it came from this vessel. Under the third head the bleeding is from the internal carotid, a wound of which must be almost instantaneously fatal.

From oral communications with some of my medical friends, other instances have come to my knowledge, not alone of excessive and often returning hemorrhage in the same patient, but in which a fatal termination has followed the opening of purulent collections, the sequelæ to scarlatina.

So critical and serious are these consequences in practice as to demand every circumspection and examination before abscesses in this region are punctured, but also active subsequent watching in order to detect the first symptom of bleeding, whether of the more evident or of the doubtful kind. We should, therefore, be prepared to meet and ward off this unpleasant, if not fatal occurrence, in cases that otherwise promise a most satisfactory termination. From an attentive examination of the abscesses which have been complicated with active losses of blood, I find that the majority of them were in subjects of a more or less cachectic habit, suffering from struma, or bad forms of scarlatina, perhaps also of a cancerous diathesis.

Analogous communications are occasionally presented to us, in the thoracic cavity, of arteries opening into ulcerated excavations, often causing sudden death ; the accident showing in strong contrast the practice of surgery compared with that of medicine. In the former, by its remedial means, if life cannot be preserved, still some extension will be afforded to it; while, in the latter, we are compelled to look on with the calmness of despair, bereft of all hope, incapable of affording any assistance.

The following case, condensed from most accurate and

minute notes taken by the late Mr. Keatinge(*a*), exhibits in a forcible manner the untoward accident of active arterial hemorrhage succeeding to the opening of a cervical abscess, which required the tying of the left common carotid artery, by which the life of the patient was saved.

" Patrick Beahan, aged 61, master of a ballast lighter, was admitted into the City of Dublin Hospital, on the 15th of January, 1849, under the care of Dr. Hargrave.

" Two years previous to his applying to the hospital he had a superficial cancer on the lower lip, on the left side, which was removed by some powerful escharotic, leaving a slight depression evident on the lip, but no trace whatever of cancer or any local affection remained. He had been attending as an out patient for some weeks, for a tumour occupying the space between the symphysis and the angle of the jaw on the left side. The tumour was rather firm on pressure, and, on careful examination, fluctuation was very evident. It was punctured last Saturday by Dr. Hargrave, and a quantity of straw-coloured serum, mixed with scrofulous-looking matter, discharged; a dossil of lint was introduced into the incision; he was directed to poultice it, and, if any pain occurred, to return on the following day. On Sunday, shortly after twelve o'clock, he experienced a very severe rigor, with intense headach, sickness of stomach, and pain in the tumour; on Monday he came to the hospital in the following condition: the left side of face swollen, with an erysipelatous blush spread over it, and extending to near the left eye; pain in the tumour; some headach; thirst; pulse 92, full and strong; tongue coated, bowels

(*a*) I regret to record the death of my young friend, who in November, 1848, entered upon the duties of resident surgeon to the hospital, which he performed with the most unremitting attention and zeal. He fell a victim to typhus fever, of very short duration, in March last. In all his relations, as a student, a surgeon, and a gentleman, he gained and maintained the esteem of all who were acquainted with him.

constipated: the dossil of lint was removed from the wound; he was ordered to bed, and a purgative bolus was prescribed."

From the 16th of January the erysipelas, which had extended upwards over the face to the scalp and eye-lids, and was attended with nocturnal raving, was treated by leeches in small numbers, applied at two different periods, by mercurial inunction, and the internal use of camphor, bark, and aromatic confection; poultices were applied to the abscess, the discharge from which was daily improving in character up to January 20th, when something *like grumous blood appeared on the poultice;* this appearance continued the following day, but was less the one after, i. e. the 22nd, on which day the report states: "The skin of the face is much corrugated, that of the forehead and eye-lids is desquamating; no pain of head; bowels moved four times last night; discharges bilious; tongue not so much coated; pulse 92 and soft."

23rd January. The report goes on to state: "About half-past seven o'clock last night a gush of blood came from the cavity of the abscess, through the lancet wound which was made on the 13th instant; it flowed *per saltum*, was of a florid red colour, and was arrested by placing the finger on the wound. He was asleep when the hemorrhage first commenced, but it awoke him, and although assistance was at hand immediately on its being discovered, he yet lost a considerable quantity of blood, his shirt, the sheet, and the pillow-cover being saturated with it. When the finger was removed from the wound, the blood came out in a jet the thickness of the little finger, and was thrown fully a yard distant. A consultation was held, and it was decided that the common carotid artery should be tied. The operation was performed by Dr. Hargrave in the following manner:—a *transverse incision* was first made through the integuments, about two fingers' breadth above the clavicle; the sterno-mastoid muscle was then carefully divided upon a director for its entire breath, and the sheath of the vessels was easily brought into view, crossed by the omo-hyoid muscle, which was dis-

tinctly seen occasionally in action; the sheath of the vessel was next opened, and the aneurismal needle passed under the artery from without inwards; it was then armed with the ligature, the needle withdrawn, and the artery firmly tied: the hemorrhage was instantly arrested, and all pulsation in the temporal artery ceased. Immediately after the vessel was tied the patient had two severe rigors, quickly succeeding each other, but of short duration; they were followed by active vomiting of some fluid: there was no alteration of vision. No blood was lost during the operation; only one small vein was met with, and that at the commencement of it: the internal jugular vein presented no impediment during its performance. The pulse was slow and weak; while on the table he got a glass of wine, and at ten o'clock, P. M., eight grains of compound chalk powder and Dover's Powder were administered to him, his bowels being rather free during the day. He passed a quiet night, with some wandering, but not so much as previously; no headach; some thirst; bowels moved twice; pulse 68, soft and weak; tongue coated and moist; no pain of neck; swelling of face much less, but abscess much larger, the cavity of it being probably filled by coagulated blood, a coagulum occupies the wound in it; surface of body warm. Diet, arrow root, beef-tea, and cool barley water."

From the morning of the 23rd January, the day after the operation, absolute repose was enjoined, warm water dressing was applied to the abscess, which ulcerated in a fresh portion of the skin below the puncture, and discharged large clots of blood. The two openings were then laid into one. The discharge, though of a healthy character, possessed great fetor, caused by disease appearing in the inferior maxilla, which had become deprived of its periosteum, the bone being scabrous and rough. The constitutional treatment consisted in the administration of the syrupus cinchonæ, occasional doses of camphor, with sub-carbonate of ammonia, and opium, and a guardedly generous diet. The case progressed favourably up

to the thirteenth day from the application of the ligature, when the report states: "Feb. 5th. At about half-past eight o'clock last night some hemorrhage took place from the incision made for taking up the artery; the blood was of a florid red colour, not much in quantity, and stopped of its own accord; after it, his pulse was full, strong, and 92; the dressings, which were not removed, were incrusted with blood; he rested very well during the night, till half-past six o'clock this morning, when hemorrhage again broke out; it came *per saltum* from the dressings, was of a florid red colour, and profuse in quantity; his flannel vest, shirt, and the sheet, were saturated with it as far down as his hips. When the dressings were removed it was arrested by pressure. Pulse very weak and easily compressed; surface of body and feet warm; says he felt a throbbing in his neck before the hemorrhage occurred; tongue rather moist and clean; complains of thirst."

I was called to him at seven o'clock, A. M., and but for the clear, intelligent expression of the eyes, would have considered him moribund; he was given some wine and water; a firm clot of blood glued up the wound; the ligature was *in statu quo*. All the parts were kept as quiet as possible, and dressed with matico leaves moistened in hot water, laid thickly over the incision, over which was placed a compress of lint, well saturated with an infusion of the leaf, and secured by means of adhesive plaster.

From this morning (Feb. 5th), the local treatment consisted in the daily dressing of the wound as just described. The parietes of the abscess were excessively indolent, showing no tendency whatever to granulate; a whitish painless fungus appeared at its internal surface, but it still discharged rather laudable pus. It was cleansed out occasionally with a solution of chloride of lime, and also a weak solution of chloride of zinc, a grain to the ounce of distilled water. It was dressed alternately with Peruvian balsam and compound tincture of benzoin. The constitutional treatment was successfully

directed to allay a very harassing cough, by means of gum ammoniac mixture, ipecacuanha wine, syrup of Tolu, &c.

Feb. 12th. The report states: "The ligature came away quite easily in the dressings this morning; some old clots of blood and sloughs also came away with it; no hemorrhage; the incision is granulating. An abscess is forming behind the angle of the jaw on the left side, which part is swollen and painful. In the original abscess there is a quantity of sloughy matter, apparently the remains of the cyst, while anteriorly there is a hard, elastic mass projecting into the opening of the abscess, and presenting the appearance of a gland; the inferior maxilla feels quite denuded of periosteum, and scabrous. The man sleeps well; his appetite is good; bowels regular; pulse moderate; tongue very clean. To continue the treatment."

From the date of the operation to the casting off of the ligature, twenty days and a half elapsed; subsequent to this his general health continued improving in every respect, but the original local disease showed no great tendency to heal; on more than one occasion, it appeared to me to exhibit something of a malignant character, but was always devoid of pain. Small abscesses began to form, one in the left cheek, giving exit to healthy matter, another in the vicinity of the great left cornu of the os hyoides; while the one inferior and posterior to the angle of the jaw discharged large quantities of healthy purulent matter. As he exhibited some impatience at remaining in hospital, although availing himself of exercise in the garden, it was considered best to comply with his wishes, and, by permitting him to return home, observe the effects of change of air, not alone for the healing of the original, but also to prevent the formation of other abscesses. He was accordingly discharged on the 13th March, the following appearances being then noted: "The skin was of a livid colour, particularly behind the angle of the jaw, on the neck, below the arterial incision, and also under the chin. The cheek on the left side is much more prominent

than the right, commencing near the symphysis menti, extending backwards to the ear, and behind the angle of the jaw, upwards to a line drawn from the angle of the mouth to the meatus auditorius externus, and downwards to the arterial wound. The induration in the tumour is not so great, the parts being infiltrated, as it were, with purulent matter; the ulcerated opening is about the size of half-a-crown, its edges somewhat everted, and at its inferior part is a small eminence growing from the inside of the wound and covered with a yellowish slough; the surface of its cavity presents a granular appearance of a greyish colour, and its depth is about two inches and a half; the discharge is rather thin and scanty, of a light yellowish colour, and slightly fetid; when pressure is made under the chin healthy pus is discharged from the opening. The inferior maxilla is quite rough and bare, and the arterial incision is all but healed. The collateral circulation was beginning to manifest itself, as an artery, perhaps a fifth thyroid, could be observed pulsating and ascending along the mesial line of the neck."

While preparing this communication for publication, I was informed that this patient died on the 2nd of April last. On inquiring from his brother the particulars attendant on his death, and his condition since he left the hospital, he informed me that the ulcer diminished somewhat in depth, also in the circumference, and he never complained of pain in it; he suffered much from cough, and expectorated large quantities of a thin, ropy fluid; his dissolution was calm and tranquil.

The operation, in this instance, differed from that usually selected for securing the carotid, by cutting not along the anterior edge of the mastoid muscle, but *completely across it*, which enabled me to come down upon the artery in the easiest way, with a free gaping wound, experiencing no impediment either from the eighth pair of nerves or from the internal jugular vein. My reasons for adopting this innovation were the comparative shortness of the man's neck, and in order to obtain a sound portion

of the tegumentary membranes free from erysipelatous inflammation. In the subsequent steps of the operation this selection proved to be most fortunate, as it was discovered that the blood effused from the artery was extravasated as low as the cricoid cartilage; so that if the usual line of incision had been adopted, along the anterior edge of the sterno-mastoid muscle, the certainty is that I would have opened into the cavity formed by the effused blood, and would have found it almost impossible to have proceeded with the operation so as to tie the vessel. I would have been inundated with blood, and ultimately obliged to abandon it, and adopt that very unsatisfactory and doubtful practice of plugging the wound with sponges and compresses, to procure, perhaps, but a temporary continuance of life. Can I attribute the prevention of the return of the secondary hemorrhage, which occurred twice, on the thirteenth day and a half after the ligature had been applied, to the dressing with matico leaves, and compresses of lint saturated in an infusion of it? It is but fair to infer that such was the fact, and if so, it is a most valuable, and at the same time a most simple application for such a purpose. That the incisions made to secure the artery never showed the least sign of granulation till after the use of the matico, up to which period they exhibited a white, sloughy, inactive character, there is no doubt. As a styptic, I have found the infusion of this leaf most satisfactory in controlling the bleeding in persons of hemorrhagic diathesis. The transverse section of the mastoid muscle does not militate in any degree against its future use, as from our knowledge, derived from past experience, we know that the divided ends will become united.

In suspected communications between the vessels in the cervical region and purulent formations, the diagnosis and line of treatment must be determined before opening them with the lancet or otherwise, by the phenomena derived from the information afforded by the stethoscope,—which is not always unerring,—and by careful exploration; the diagnosis and prognosis must be formed upon these evidences, and we are to act

accordingly. But what should be the line of practice when hemorrhage succeeds the opening of an abscess in any of the cervical regions? No precise and definite one can be laid down; each case must, I conceive, be treated upon its own merits or peculiarities. In some cases laying open the cavity freely, and carefully plugging it with lint saturated in an infusion of matico leaves, and also dressing the surface with it, is useful. The lint should be secured with imbricated layers of adhesive plaster, and then all the dressings well supported by a carefully applied spica capitis bandage. This may succeed in finally arresting the bleeding. In other cases the only remedy left will be to tie the carotid. In the adult with a very short neck, and in children, whose necks are not yet fully developed, or are comparatively very short, the transverse section of the sterno-cleido-mastoid muscle will afford a most facile and ready preliminary step in our operation, enabling the surgeon to come down perpendicularly upon the vessel.

In none of the special works on operative surgery with which I am acquainted are any directions given for taking up the carotid artery as now detailed. I have been for some years in the habit of describing this operation in my lectures on operative surgery; and also of directing the attention of naval surgeons, who have performed a course of operations in surgery under my superintendence, to this operation. From the facility of securing the artery by the plan now proposed, I consider it deserving of a place in the systematic works in this department of surgery, and would term it the *transverse operation, or section of the sterno-mastoid muscle for the ligature of the common carotid artery.*

By selecting the carotid tubercle for the place of compression, a point, in many instances favourable to the surgeon, is afforded by it till more effectual means can be made use of for arresting the hemorrhage. Whilst the temporary compression is being made upon the tubercle, it should be directed a little towards the mesial line of the neck; for if it be made in the

opposite direction, it cannot be well borne by the patient, owing to the eighth pair of nerves being affected by it, and the return of the blood from the head will in some degree be influenced, as the internal jugular vein will suffer from the pressure when made in the external direction.

It is still a source of surprise how very little disturbance, cerebral or otherwise, follows the sudden arrest of at least one-fourth of the blood destined to circulate through the cranial cavity; in the instance here given the phenomena of vomiting and the two very severe but short rigors, are already detailed in the notes of the case. No appreciable effects were produced either upon the sensorium, or upon any of the organs of sense.

Art. III.—*Surgical Cases and Observations.* By John Hamilton, F. R. C. S. I., Surgeon to the Richmond Hospital.

FUNGUS HÆMATODES.

The duration of fungus hæmatodes is generally from three to four years; the patient either dies exhausted by repeated hemorrhages; the neighbouring glands and structures are contaminated; or important viscera become the seat of the same malignant degeneration. The following case is worth recording, on account of the extreme length to which the disease extended,—twelve years; the absence of any contamination of the neighbouring glands in the most inveterate of its stages during that long period; and for the part which the treatment had in prolonging life by keeping the hemorrhage in check. The patient was seen at different periods by Sir Philip Crampton, Sir B. Brodie, Mr. Travers, Mr. Cutler, Mr. Carmichael, and Mr. Smyly.

The Bishop of —— first consulted me on June 11th, 1841. At this time he was 70, and the disease was of four years' standing. In the right breast there was a tumour the size of a large egg, hard, and irregularly knobbed on the surface; the integu-

ments natural, except over the centre at the nipple, where, for nearly the size of a half-crown, they were of a purple livid red, and many small vessels were apparent on the surface. The skin at this part was extremely thin, and adherent to the tumour, which was freely moveable over the pectoral muscle; it was not painful. The growth, at first slow, had latterly become more rapid. When he consulted Mr. Travers two years before, he had recommended its removal, but Sir B. Brodie and Sir P. Crampton were against operating,—first, because, at his time of life, any operation was serious; 2nd, the growth of tumours in old people was slow; 3rd, the great probability of its re-appearing either at the place of removal or in some internal organ.

The increase, though gradual, was decided; the lobules of which the tumour was composed became discoloured, the more prominent and central ones of a livid red, and the vessels on the surface large and tortuous. At length some of the lobules became excoriated on the top, and discharged a bloody serum, with occasionally a smart bleeding; the excoriations were usually preceded by distinct vesications. They healed in a short time under the application of a solution of the nitrate of silver, and dressing with the white oxide of zinc ointment. About five years before his death the first alarming hemorrhage occurred from the giving way of a large superficial vessel which traversed one of these abraded surfaces. It came on after breakfast, and he was unconscious of it till he had lost much blood, the feeling of something hot running into his breeches and stockings being the first intimation. I found him deadly pale, and very faint; his shirt, a towel, and a sheet which had been applied to stop the gush of blood, were completely saturated. After this he was so nervous about hemorrhage that he resided chiefly in Dublin or its vicinity. This loss of blood was followed, besides much prostration, by a fit of the gout (a sequence frequently observed afterwards), and one of the lobules, the size of a small apple, turned first ash-coloured, then black, and finally separated, leaving a cavity which continued foul for

some time, and its separation was attended with a thin, fetid discharge. Other lobules would from time to time, in like manner, die and slough off. The cavities, thus left at first foul and sloughy, became clean and granular, and were filled up partly by granulations, and partly by the gradually enlarging neighbouring lobules pressing in and encroaching on the space. This death and separation of individual lobules became more frequent, so as at one time to diminish considerably the otherwise rapidly increasing tumour. *At no time did a fungus shoot forth.* When part of a lobule had died and separated, the remaining portion showed the mass to be composed of a shreddy, spongy substance, or a structure resembling brain, but firmer. Smart bleedings came from these cavities, usually from the edges near the surface, but some of the worst hemorrhages were in consequence of the large purple vessels which traversed the surface of the tumour becoming abraded, and giving way at the point of abrasion. Though they bled furiously, the bleeding was very easily controlled; the vessels seemed to partake of the properties of vein and artery, something intermediate between both, spirting blood in a jet like an artery, and frequently quite florid, but having their coats unlike the contractile elastic coat of arteries. Hemorrhage from this cause, viz., abrasion of large superficial vessels became latterly more frequent, in consequence of the sides of the tumour projecting considerably beyond the base; the under surface of the projecting portion rested on the skin, and became abraded by the friction from the motion of the tumour, which was free to the last. One such bleeding was so sudden and so large that he fainted, had a convulsion, and became quite pulseless, so that I thought life was extinct; gradually, however, the action of the heart and consciousness returned, and he lived for nine months after. During the faints attending these losses of blood, the contents of the stomach were vomited, and the urine and fæces passed involuntarily. The last hemorrhage, which occurred ten days before his death, and caused it, proceeded from

the abrasion of one of the large superficial vessels at the upper part of the tumour. It came on suddenly after breakfast, and, as I was not at home at the time, Mr. Smyly saw him, and arrested the bleeding. On arriving an hour afterwards, I found him deadly pale, and nearly speechless. He rallied a little, but it then became obvious that he laboured under paralysis of the left arm and leg, side of the face, and of speech. As paralysis takes place from want of blood in the brain, where both carotids are tied, so, in this case, it occurred from the sudden deprivation of a large quantity of blood from the brain, as, on a former occasion, the same cause had induced convulsions(*a*).

Another distressing feature was, that for the last few days he had every three or four minutes violent spasms of the paralytic leg, which would forcibly contract it, and raise it in the bed. They gradually subsided with his decreasing strength. He lay comatose for two days before death. He was seventy-eight years old, twelve of which he had borne the tumour. For the last few months it presented the following appearances. It occupied the right mamma, and extended from near the sternum to a short distance from the axilla, nearly two spans from side to side, and one from above downwards.. It was prominent, and the border below considerably overlapped the base. It was divided into many small lobules, varying in size from a small apple to a chesnut, generally of a purplish or livid pink colour, with many small vessels apparent on the surface. There was in its centre, and extending laterally in an irregular man-

(*a*) Some years since I saw an interesting case which bears on this point. A man was admitted into the Meath Hospital, under Dr. Graves, with paralysis of the right side and of speech. Two days after he was discovered to have a thoracic aneurism, shortly after which he died. My friend, Dr. Hudson, of Navan, and myself, examined the body, and found the aneurism to be one of the arteria innominata, but the roots of the left subclavian and carotid, as well as the right subclavian and carotid, were nearly obliterated by steatomatous thickening of their coats. The caliber of the vertebrals was also diminished by the same cause, so that the supply of blood to the brain must have been small indeed.

ner, a deep ulcerated cavity, with somewhat sloughy surface and overlapping edges, discharging profusely a fetid, thin, bloody, purulent fluid: here and there other small ulcerated cavities existed, where lobules had sloughed away. *None of the neighbouring glands were enlarged*, and, strange to say, he suffered comparatively little pain, the distressing circumstances being the large bulk of the tumour, rendering peculiarities of dress necessary, but chiefly the profuse discharge, which it was difficult to absorb, to prevent its saturating the clothes, and becoming offensive. As I believe the fatal termination to have been retarded by the mode of dressing adopted for the last few years, I shall venture to detail it, thinking it possible that it may be advantageously used in other cases, modified according to the judgment of the practitioner.

The ulcerated cavities were first well washed with a weak tepid solution of the chloride of lime, then brushed over with the tincture of matico. Every ulcerated or abraded surface was covered with a well-pressed layer of the fuzzy part of lint, prepared by scraping off the dressed side of it. A supply of this, prepared by Mr. Moore of Anne-street, was always kept ready, as it was found the most certain material for stopping bleeding. Over this layer, the cavities were filled with French wadding, as otherwise too much of the fuzz of lint would have been used, economy in this respect being necessary, as its manufacture was tiresome and only a small quantity could be got from much lint. The French wadding was not found to answer well by itself; it was too elastic, and did not therefore preserve a close firm contact with the unequal ulcerated surfaces, besides it stuck so closely that blood always followed its necessarily forcible removal. A piece of lint, spread with white oxide of zinc ointment, was next applied. To keep up a steady pressure, and preserve these dressings in their places, straps of kid leather, two inches broad, prepared with soap plaster only at their extremities, were put across the tumour in various directions, and formed a complete cover for it. The essential parts of this

treatment were, first, the fuzz of lint, which is one of the best materials to stop hemorrhage, particularly when there is a general oozing from the surface(*a*), or where vessels do not admit of ligature; secondly, the straps, the steady pressure of which was most useful. By these means, the bleeding from the extensive raw and highly vascular surface was rendered comparatively small, the most fatal hemorrhages having resulted from the giving way or abrasion of the large vessels on the surface.

Another form of fungoid disease is that in which the tumour, though large, is not divided, as in this case, into lobules, but consists of a membranous cyst filled with a brain-like matter, rather white, streaked by blood-vessels, or discoloured by effused blood. This has been termed medullary sarcoma(*b*). The following is a good example:

Anne Kavenagh, aged 18, admitted into the Richmond Hospital, December 5, 1847. Had been always healthy, till three months ago, when, in coming down stairs, she sprained her right leg. It did not swell or become painful till a fortnight after; she then, while walking, felt a pain darting through the leg, particularly severe at the upper part. She has suffered from it ever since so severely at night as to deprive her of sleep during the first part of the night. At the same time a swelling was observed on the outside of the upper part of the leg at the head of the fibula, which has increased rapidly since, and at present rather more than the upper third of the leg is occupied by a considerable swelling, uneven on the surface, elastic, especially in front, where it simulates deep-seated fluctuation; elsewhere it feels more solid. Numerous small veins on the surface give it

(*a*) I used it with the most perfect success in a case of secondary bleeding after amputation of the arm, when there was a general flow from the surface, after a long time had been ineffectually spent in trying to repress the hemorrhage by the resident pupil, who had tied several vessels in vain.

(*b*) See "Inquiry into the Nature of Parasitic Tumours in general, particularly those called Medullary Sarcoma and Fungus Hæmatodes." Translated from the German of E. J. Meyne, M. D.

a bluish tinge, otherwise the integuments are pale and natural; there was no tenderness on pressure; and the motions of the foot do not affect it. The superior portion of the fibula seems lost in its anterior half, but the great bulk of the tumour is behind, occupying the upper part of the calf; no pulsation; the ankle slightly œdematous. Three weeks since, the tumour being soft and elastic, and the sense of deep-seated fluctuation so strongly deceptive, and it had so much the character of chronic abscess, that a small caustic issue had been inserted over the most prominent part of the swelling; this had now nearly skinned over. She has no cough or symptom of internal disease.

Although the impression was strong in my mind that the tumour was malignant, yet as the serious question of amputation was involved in the positive decision of its real nature, I passed a capillary trocar and canula into the most elastic part; nothing came but black fluid blood: this, coupled with the other circumstances of the case, demonstrated it to be a malignant tumour. My colleagues having concurred in this opinion, I removed the leg above the knee, by the circular incision, on Wednesday, December 22nd. As she was a young woman in a respectable rank of life, and very timid, I wished to spare her the distress almost inseparable from the presence of the usual crowd of spectators, and therefore adjusted the tourniquet in the room next to the operation theatre, and put her into an insensible condition by chloroform, which was accomplished in a few seconds by sprinkling about three drachms on a towel folded into a hollow cone, and held under her mouth and nostrils. In the state of insensibility she was carried into the theatre, and it was kept up during the operation by holding the towel occasionally under the nose. Before commencing the amputation, to prevent the possibility of error, a deep puncture was made into the tumour with a strait bistoury; a large stream of black blood gushed forth. The leg was then rapidly removed, and she only regained consciousness, and asked if it was off, as she was being carried out of the theatre. Except a slight exfoliation of bone,

nothing material occurred, and I have heard from some friends who saw her in the country a few days since (May 21, 1849), that she is now quite well.

Examination of the removed limb showed the tumour to be formed by an expansion of the upper third of the fibula into a swelling the size of a cocoa nut, perfectly enclosed by a strong fibrous cyst, and containing a white substance of the consistence of softened brain, here and there a little blood-shot. A few spiculæ of bone were felt on its surface next the inside of the fibrous cyst. These spiculæ were the only remains of the upper part of the fibula, which had otherwise entirely disappeared, the morbid growth seeming to have sprung from the centre of the bone, which it gradually destroyed, expanding the periosteum before it, which, thickened and extended, became its cyst. The end of the fibula, as it entered the substance of the tumour, was like a broken bone, irregular and spiculated. The peroneal nerve, flattened, and in a state of tension, passed directly across the surface of the tumour; a fact that explains the great pain she felt, so unusual in tumours of this class. The gastrocnemius and solæus muscles were also found expanded on the surface of the tumour and very attenuated; they had undergone a material alteration, and one of the peroneal muscles was infiltrated with fungoid matter. The vessels were healthy.

Fungoid tumours occur more frequently in the head of the tibia than in the fibula. For some reason not yet satisfactorily made out they often pulsate strongly, and when they project backwards in the popliteal space the pulsating tumour is naturally at first taken for popliteal aneurism. The progress of the case generally soon dissipates this error. I have seen them in the head of the tibia without pulsating, projecting in front, elastic, soft, and with that pseudo-fluctuating feel, which, though we so readily blame others for mistaking, we must confess to have more than once deceived ourselves. I have seen a surgeon, confident that a tumour of this kind contained matter, make a free opening with an abscess lancet, and then only become

painfully aware of his mistake by the protrusion of a red currant-jelly-looking mass. When the tumour is large, nodulated, and the surface permeated by large vessels, the diagnosis is sufficiently simple; but in an earlier and more doubtful stage, when amputation is most advisable, before the glands in the groin are contaminated, or before the disease has opened into the knee-joint, it is well to have some means of diagnosis less fallacious than the touch. I do not think there can be any objection to making an exploratory puncture with a small trocar and canula. If the exit of pus proves it an abscess the opening can be enlarged; if only a bloody fluid flows out, its malignant nature may be inferred; but I should not feel satisfied unless, immediately before amputation, I had made a free puncture with a straight bistoury, as I did in this case. We must be on our guard against the occasional fallacy of the small exploratory needle and canula of Weiss: we must remember that deep-seated matter, under strong fasciæ or fibrous membranes, is usually very thick. A familiar example of this is observed in deep-seated whitlow, where the matter is more like thick curd than pus. A young man was admitted into the Richmond Hospital with very severe pain at the upper part of the hip, a little below the anterior spine of the ilium; he had fallen down a ladder about a week before, and struck this part in falling. There was a very deep-seated diffused tumour, extremely tender; he had high fever and sleepless nights. The natural conclusion was that there was matter, but it was too deep to be positive, and I therefore made an exploratory puncture with Weiss's long needle and canula. Nothing but blood came. A second puncture produced nothing more. Not satisfied, I plunged in a straight bistoury, and thick yellow matter gushed out.

Brian O'Brien, a man forty years of age, was admitted with idiopathic inflammation of the right testicle. Though it was only of four days' standing, the symptoms were so violent that I diagnosed suppuration to have taken place. An exploratory

puncture was made with the needle, but blood only came through the canula. Confident, however, in the correctness of my opinion, I made a deep puncture with a bistoury, when thick yellow matter flowed freely forth. These cases prove that the negative evidence of the needle and canula is not always conclusive when the matter is very thick.

Art. IV.—*A Report upon the Use of Chloroform in fifty-six Cases of Labour occurring in the Dublin Lying-in Hospital.* By John Denham, M. D., Ex-Assistant Physician to that Institution.

[Read at the Dublin Obstetrical Society, 4th January and 12th March, 1849.]

In the year 1799, Sir Humphrey Davy, while boldly experimenting on himself, discovered the curious properties of nitrous oxide gas with which we are now so familiar.

In the Quarterly Journal of Science for 1818, we have an account of the effects produced by the inhalation of ether; and in the same article there is notice of a case where the incautious use of it was followed by very alarming symptoms.

In 1844, Mr. Horace Wells, an American dentist, had a tooth extracted from himself, and performed the same operation on others, without pain, while under the influence of nitrous oxide gas. He communicated the result of these experiments to Dr. Morton of Boston, who, in 1846, extracted a tooth from a patient while under the influence of the vapour of ether, and who declared that he was totally unconscious of its removal.

The value of this fact, which has lain so long dormant, having been thus discovered by our transatlantic brethren, its fame soon reached our shores, and it now ranks as one of the greatest improvements in operative surgery since the introduction of the ligature.

In January, 1847, Professor Simpson of Edinburgh administered ether for the first time in midwifery practice, and the

result, he states, was most satisfactory and most important. In November following, at the suggestion, it is stated, of Mr. Waldie, of Apothecaries' Hall, Liverpool, he employed a new anæsthetic agent (chloroform), which has since been almost exclusively used in surgery and midwifery.

Such is a brief outline of the history of anæsthesia. However much it may advantage the public, I fear it is destined, like many of our great discoveries, to prove an apple of discord to our profession. Some consider it of so little value that they will not even give it a trial, and in reply to the praise bestowed upon it, are ready to exclaim,—"a mountain in labour, a mouse is brought forth." Others, again, while they do not entirely exclude it from practice, have drawn such a fearful picture of the evils likely to arise from its use, as to deter the boldest practitioner from ever having recourse to it, even in circumstances the most inviting. "Apoplectic stertor, convulsions, partial paralysis," the blood blackened, the brain poisoned, and other still more formidable consequences, are amongst the number of the dangers mentioned as liable to be induced by the state of anæsthesia. A third class of practitioners, those in favour of chloroform, pronounce it to be a panacea for all the pains and penalties of childbed, and would have us believe that it not only insures the parturient patient a release from all present suffering, but escape from all subsequent danger, so that the dread of parturition may be for ever swept away from the list of objections to the married state among women.

During the later part of my residence in the Dublin Lying-in Hospital, as assistant physician, Dr. Shekleton, the present Master, with that laudable desire to advance the interests of the profession, and mitigate the sufferings of his patients, which has ever marked his course through life, requested me to carry on a series of observations upon this important and much-disputed question; and it is, therefore, to his kindness that I am indebted for being able to make the present communication. I may remark, in passing, that the subject was taken up without

the slightest intention of making out a case either for or against the use of chloroform. To discover where the truth lay was our only object; if in addition to this we are enabled to reconcile some of the conflicting opinions, remove preconceived notions and prejudices, and expose some errors into which those who are perhaps too enthusiastic in their praise, and too indiscriminate in their use of anæsthetic agents, may have fallen, we shall have more than accomplished what we propose.

I approach the subject with diffidence and fear. With diffidence lest I may appear opposed to men whose opinions I have been at all times accustomed preeminently to respect; with fear, from a consciousness of my inability to do justice to the subject, and being deeply impressed with the responsibility that attaches to him who would take up the discussion of so important a question. I am encouraged, however, by the circumstance that I have principally to deal with facts, and give the result of cases noted with the greatest care and accuracy, and taken, moreover, in the presence of many intelligent pupils, whose anxiety to arrive at the truth renders this report, if not conclusive on the subject, at least worthy of credence.

The patients on whom the observations were made were generally healthy, but in no instance did we select them as being likely to prove favourable or the reverse to the use of chloroform; nor did we in any case administer it where we had reason to suspect the existence of organic disease in any vital part. We gave it:

1st. To produce insensibility during operations.

2nd. To relieve intensity of suffering.

3rd. To quiet particularly noisy patients.

4th. By way of experiment, in ordinary cases, where we had no very definite object in view.

If asked to define anæsthesia, I think we might fairly describe it as a scientific form of intoxication, the effects of which very soon pass away. It may, therefore, be questioned, how far we are right, in a moral point of view, in producing such a

state, even for the purpose of allaying pain. The scriptural objections have been so fully answered by others, that it is unnecessary to dwell upon them here.

The object proposed in giving it, in operative surgery and midwifery practice, is in some respects the same. In both we administer it with a view of saving our patients a certain amount of pain, and lessening the shock of an operation, or that consequent on the birth of the child; this is not only a present advantage, but it generally exercises a happy influence on the recovery of the patients.

In both cases we incur a certain amount of present danger, and, perchance, of remote ill effects. That there is present danger, the history of surgical cases, where it has been used, fully proves; but it is a remarkable fact, that scarcely one well-authenticated, immediately fatal case in midwifery practice has yet been recorded,—certainly not one has occurred in this country,—nor have we witnessed any very alarming symptoms directly traceable to its effects, when administered for this purpose. With the remote ill effects in surgical cases I am not conversant; but so far as my experience goes, I know of none in midwifery, either to mother or child. We have further to consider its direct and immediate influence on the process of parturition, which brings us directly to the object of this paper.

When a patient in labour is first brought under the influence of chloroform, it will generally be found that the pains are diminished in force, frequency, and duration. After some time they generally regain much of what they had lost, and though apparently weaker, they yet seem to tell with equal or even better effect upon the progress of the labour. The muscles of animal life are first affected, and if a complete state of anæsthesia be induced, the action of the uterus is also impaired. If the chloroform be suspended for a short time, both sets of muscles soon regain their usual power. The effect upon the sensorium is very variable; some pass rapidly into a state of insensibility, while others become boisterous and difficult to manage; but in all who can be induced to use it sufficiently

long, it appears to mitigate the feeling of pain, to modify the impression, or remove the recollection of it. The pupils remain natural during the first or excitable stage, but when anæsthesia is fully induced they almost invariably become dilated. Of its effects upon the os uteri I cannot speak very confidently, as we seldom gave it in the first stage of labour; so far as I have seen, however, I believe it does not retard, but rather tends to promote dilatation of it. That the vagina and os externum become relaxed there cannot be a doubt. We did not remark the perinæum to yield more in proportion than the other soft parts. In no case did we witness injury to the child, even in the remotest degree.

The cases of natural labour, in which chloroform was administered in the Dublin Lying-in Hospital, may, I think, be divided with advantage into three classes:

1st. The ordinary every-day case, in which the labour was short and comparatively easy, and where the patient would have soon got well whether we gave it or not.

2nd. Cases where some interference was necessary, and where the chloroform was given with marked advantage, causing the labour to advance, while at the same time it saved the patient from a very considerable amount of suffering.

3rd. Cases in which the chloroform appeared to be not only useless, but, when persevered in, positively injurious. I shall give a few cases in detail illustrative of what has been said, and conclude this part of the subject with some general remarks upon each of the three classes just alluded to.

CASES OF SHORT AND EASY LABOUR.

Case I.—Anne Flood, aged 30, a stout, healthy-looking woman, admitted into hospital in labour of her fourth child. The chloroform was not administered until the second stage of labour had commenced; she soon became affected by it, and although there was very little muscular effort, still the labour went on favourably, and she was delivered of a male child just

one hour from the time she became insensible. She had a good recovery, and went home well on the eighth day.

Case II.—Ellen Carroll, aged 26; fourth pregnancy. Her labour set in at 5, A. M., the waters coming away nearly at the same time. At half-past 8 the os was fully dilated, and at twenty minutes past 9 the head was pressing; pains strong, with intervals of two minutes; pulse 96. She was now put under the influence of chloroform, and the child was born forty minutes after. While in anæsthesia the intervals were lengthened, and the pains became somewhat weaker, but the three or four last were very strong indeed. The intervals were one minute, four, eight, four, six, three, and one, making an average of three minutes. She had an excellent recovery, and went home well on the eighth day.

Case III.—Ellen Doyle, aged 27; third pregnancy. On admission the os was fully dilated, and the membranes ruptured. She was very easily thrown into a state of anæsthesia, and the labour was completed in little less than one hour after. She was only five hours ill, and had a most excellent recovery.

Case IV.—Eliza Hill, aged 30, third pregnancy. Labour set in at 2, A. M., and the first stage was completed at 10 o'clock. Observations were taken from twenty minutes after 10 till twenty minutes after 11, during which the occurrence of the pains averaged from two to three minutes, and were, with scarcely an exception, strong and effective. At twenty minutes past 11 she was put under chloroform, when the intervals became lengthened, and the pains weaker; after some time they again increased in frequency, but not in force. I shall just give a few of the notes taken at the time: "Some wandering; anæsthesia fully induced in ten minutes; pains very slight; head advancing; no voluntary action; small scalp tumour protruding between labia at each pain. Twenty minutes after 12, pains very weak. Thirty-seven minutes after 12, pains stronger, but with very little advance to labour. Forty-five minutes after 12, chloroform discontinued; some voluntary action; bearing-down pains; chlo-

roform resumed; patient very completely under its influence. Thirty minutes after 1, head expelled; child born; placenta came away twelve minutes after; uterus contracted well." She was aware of the birth of the child, but felt no pain; recovery good; went home well on the eighth day.

Case V.—Ellen Hicks, aged 22, delivered while in a state of anæsthesia; the pains were diminished both in frequency and force, but the labour was short, and terminated favourably. She went home well on the eighth day.

Case VI.—Julia Dolan, aged 30; second pregnancy; history same as the last; her recovery was also good; and she was discharged well on the eighth day.

Case VII.—Catherine Flynn, aged 24, first pregnancy; labour commenced at noon on the 17th, and the first stage was completed at 9, A. M., on the 18th; the pains were then strong, lasting for about a minute, with an interval of six; pulse 120. At forty-five minutes after 9, chloroform was given, and in five minutes it produced great excitement, with some nausea; pulse falling to 108. At ten minutes past 10 anæsthesia fully produced; vomited some bilious matter; had a slight rigor at thirty minutes after 10. She was now kept only partially under chloroform; her consciousness returned, and she answered questions correctly. 11 o'clock, chloroform entirely stopped for a while; pains much stronger; complains of thirst; head now distends perinæum at each pain. 12 o'clock, chloroform again given, but not to the full extent; some voluntary muscular action; pains more effective; cries out with them, but sleeps calmly in the intervals. Thirty minutes after 12, more completely under chloroform; head expelled by a very sudden strong pain, without a cry; birth completed at thirty-eight minutes after 12, by another pain: placenta came away, and was followed by some hemorrhage. This patient was three hours all but seven minutes under the influence of chloroform, but not completely, as she was quite conscious of the birth of her child,

but declared that she felt no pain. She recovered favourably, and was discharged on the eighth day.

Such is a brief outline of a few cases of natural labour, where, the parts being soft and cool, while, at the same time, there was an abundance of room, the patients were "made well" while under the influence of chloroform, with a very happy effect. Five of them denied all consciousness of pain, and several of them were ignorant of the time when their children were born. Doubtless, these women, if left to nature, would have had an easy and safe delivery, followed by a good recovery, and in some the labour would probably have been completed in a somewhat shorter space of time; but, on the other hand, we cannot, we ought not, to conceal from ourselves the fact, that they escaped a considerable amount of pain and mental anxiety, and that they all had good recoveries, without a single bad symptom, either at the time or subsequently.

The following cases are examples of the second division of natural labours which we have made, and in which the good effects of chloroform were more decidedly evident.

Case VIII.—Catherine M'Loughlin, aged 18. She had been twenty-one hours in labour before admission; on examination the head was found low in the pelvis; the pains were almost constant, but the labour was not making much progress, nothing at least in comparison to the severity of the pains, each of which were accompanied with loud screams, and constant complaints of intense suffering; pulse in the intervals only 72. Chloroform was administered, and she was kept completely under its influence from seven minutes after 9 till thirty minutes after 10, when her child was born; in fact, the moment we relaxed in the slightest, she became so violent and unmanageable as at once to require a repetition of the chloroform. I shall give a few of the notes taken at the time: "Pulse 72, intermitting; stertor in four minutes from first inhalation; in seventeen minutes pulse rose to

94, regular; complete anæsthesia in forty minutes; pulse 120 during the pain; awoke and struggled violently; chloroform resumed at sixty minutes; pains short and strong; at one hour and thirty minutes, struggling violently again, more chloroform given; each inspiration is followed by an expulsive effort; child born in ten minutes after; placenta was soon expelled; no hemorrhage. In half an hour after she was perfectly sensible, and expressed a total unconsciousness either of pain or the birth of her child." She recovered without a single bad symptom, and went home well on the eighth day.

Case IX.—Julia Dolan, aged 30, second pregnancy. The first stage of labour passed over quickly, but she was restless and fretful, complained much of her back, and bore her pains, which were now constant and strong, badly; they averaged three in every five minutes. She remained in this state for several hours, without making any perceptible progress, the head still remaining high up. She was now put under the influence of chloroform, but with some difficulty; eighteen minutes elapsed before it took any effect, during which she inhaled two drachms; she now talked incoherently, and became insensible, but without any approach to stertor. The pains diminished both in frequency and force, while the labour rapidly advanced, and the child was born just one hour from the time she commenced the chloroform. Pulse 80 during the time of inhalation; immediately after the birth of the child, it fell to 70. The pains, before the chloroform was given, averaged one in less than every two minutes; while under it, the intervals, with one exception, were from five to ten minutes. The quantity of chloroform consumed was very large, six drachms in the hour. She had no pain during the time, and knew nothing of the birth of her child: she went home well on the eighth day(*a*).

(*a*) Since writing the above I met with a case in private bearing upon this part of the subject. I was sent for to attend Mrs. B., who told me that her labours were always tedious and severe; she had been complaining for several hours before I saw her. I found the os fully dilated, and the soft

The patients in this form of labour are often of a nervous temperament, with great irritability of fibre. The delay does not arise from inertia or disproportion, and yet, although the pains are severe and constant, the labour is tedious. The prospect in such cases is by no means cheering; hours of anxious waiting, during which we are importuned by the friends, and perhaps unnerved by the sufferings of our patient, generally ensue. In such cases chloroform will be found a very valuable remedy, particularly when the delay is in the second stage.

Opiates, it is true, often benefit such cases; but to insure their effect they must be given in large doses, when they generally produce a complete suspension of all uterine action, perhaps for hours, while we can regulate the giving of chloroform so as only to allay the irritability of fibre, and quiet any unusual suffering, without interfering for any great length of time with the progress of the labour. In the cases here given, it will be seen that the pains, while apparently diminished in frequency and force, yet produced a better effect, and hastened on the labour.

We now come to the third class or variety of natural labours, namely, that in which chloroform appeared to be not only useless, but, when persevered in, positively injurious. I shall mention a few cases illustrative of this point.

Case X.—Margaret Coyle, aged 30; fourth pregnancy. On admission the os uteri was fully dilated; pains very strong and severe, but with little advance. She states that all her former labours were tedious and severe. She was put under the influence of chloroform, but the pains soon became weak, and at the end of an hour ceased entirely; the chloroform was now

parts relaxed, with a good roomy pelvis. As the pains were strong and regular, I began to congratulate myself upon a speedy release, but in this I was disappointed, as the labour scarcely made any advance. After several hours the head passed into the pelvis, but the cramps in the leg were now so severe that her screams were heard over the whole house. She was, therefore, put under the influence of chloroform, and with the happiest effect, as it not only put a stop to the cramps, but caused the labour to advance much more quickly.

left off, soon after which the pains increased to such a degree that we began to dread rupture of the uterus, especially as one of her former labours had been instrumental. She was, therefore, again put under the influence of chloroform, when the pains subsided, and she was safely delivered by the forceps; child living; no hemorrhage; recovery good. It is worth remarking that she had a rigor on both occasions immediately after recovering from the state of anæsthesia; but no other constitutional disturbance followed, nor did the rigors in the least seem to retard her recovery. It is the only instance of the kind we met with, and we are therefore inclined to look upon it as an idiosyncrasy.

Case XI.—Eliza Lawler, aged 23; first pregnancy. On admission the os was nearly fully dilated, soft parts relaxed, pelvis normal; pulse 66 in the intervals, 90 during the pain; pains constant and regular. The state of anæsthesia was soon induced, and easily kept up, as she only required four drachms of chloroform in two hours. In twenty minutes after she began to inhale she appeared to be almost in a state of coma; some cold water was then sprinkled on her face. The pains gradually diminished, and at the end of two hours had almost entirely ceased. The chloroform was now discontinued, when the pains again returned with considerable force, and the child was born in half an hour from the time she ceased to be under the influence of it. On being questioned afterwards she stated that she remembered everything that had been done to her, such as the cold water being dashed on her face, her feet being pricked and tickled, &c.; says that she slept very little during the time, and doubts whether she would wish to have it again or not.

Case XII.—For the notes of this case I am indebted to Dr. Shekleton; it is taken from his private case-book: "I was called in October last, six miles from town, to see Mrs. R., in her first labour, then under the care of a medical gentleman in the neighbourhood. He informed me that his patient had been in the hands of an ignorant midwife for upwards of twenty-four hours

before he saw her, and, finding what the case was, he sent for me immediately. On going up the avenue leading to the house, I distinctly heard the lady's screams, and fancied she was on the eve of getting well; on examination, however, I found it was a face case, the chin partly protruded, and looking towards the pubis; the features of the child were so swollen and distorted by the rude fingering of the midwife, that, except for the chin, they could not be recognised; the vagina was hot and tender from the same cause; and the perinæum hard and rigid, partly owing to the advanced age of the lady, 36, and to her habit, perhaps, of hunting regularly during the season. The pains were powerful, and evidently advancing the labour, though slowly. Instrumental assistance, from the state of the parts, was out of the question, and I determined to try the effects of chloroform, to mitigate, if possible, her agonizing screams, which accompanied every pain. She was speedily under its influence, talked at first of hounds and horses, and laughed immoderately, and it decidedly put an end to her expressions of agony; but the labour pains nearly ceased, and for two hours and a half that I kept her in a state of anæsthesia more or less profound the child never advanced. I therefore finally abandoned it altogether, and with the happiest results, for the pains speedily resumed their efficacy, the screaming never returned, and the child was born alive in three hours from the time the chloroform was relinquished.

Case XIII.—Mary Sheehan, aged 28; first pregnancy. She was put under the influence of chloroform when in the second stage of labour, the pains at the time being regular and the child advancing; at the end of fifty-three minutes we were obliged to discontinue it, as the pains had almost entirely ceased. Soon after this they again returned, and the child was born in two hours; the placenta soon came away; but at the end of six hours after delivery there was some hemorrhage, not, however, to any extent. Her recovery was tedious, and she did not leave the hospital until the twenty-fourth day.

Case XIV.—Margaret Johnson, aged 31; fifth pregnancy; arm presentation. She was put under chloroform, when turning was effected with great ease; uterine action was completely put a stop to, and did not return after the feet were brought down. We were, therefore, obliged to discontinue the chloroform; the pains soon returned, and the labour was completed in a short time. Child born alive; no hemorrhage. Discharged well on the eighth day.

Cases of this kind are generally met with among what are termed difficult labours; painfully difficult to the patient, and often distressingly tedious to the practitioner, requiring an amount of experience and patient perseverance greater than any other in the whole range of obstetric practice. It is not deformity, but disproportion, with, perhaps, rigidity of the soft parts in first cases, that we have principally to contend with. The pelvis will be found somewhat under-sized, or the head of the child may be either too large or too much ossified. The advantage to be gained from the chloroform in such cases will not be found an adequate compensation for the loss of power sustained in the muscles of animal or organic life; and were we to continue its use, I do believe that the patients would remain (doubtless in a state of blissful oblivion) undelivered for hours, or even days. It may, however, be fairly argued,—"why not give it a trial? The delay may, perhaps, arise from rigidity, or some slight amount of disproportion; and even should the pains be weakened, or put a stop to for a time, yet no other injury is likely to arise, while some of the cases given clearly go to prove that the pains, though weakened at first, yet came on more vigorously, and with better effect, after the use of chloroform than before." This we admit, but, confining ourselves to the immediate and direct effects of anæsthetic agents, I think we are warranted in coming to the conclusion that chloroform, if persevered in, will sometimes prove not only useless but positively injurious.

Such is a brief outline of fifteen cases of natural labour, in

which chloroform was administered; and I think we are taught by them that it will be found applicable to many cases, useless in some, and injurious to a few. I am persuaded we have much to learn upon the subject; much to learn (apart from all professional notoriety and eclat) as to when we should begin to administer it, and when refrain from its use; what the best mode of using it, and how great the quantity that may be given, so as to mitigate the sufferings of our patients, and yet not interfere with the progress of the labour; much, in fact, to learn as to the cases in which it will be found not only admissible, but really useful; not to speak of the question of time, so important, so intrinsically valuable, to the medical practitioner. If the question be put,—do you use chloroform in all cases of natural labour? I answer, certainly not; first, because many labours are so rapid, and attended with so little pain, that either it is unnecessary, or there is not sufficient time to produce the desired effect. It not unfrequently happens, that the child is born before the medical attendant can possibly reach his patient.

Some women object to its use, and unless there be a very urgent necessity, I think we should never press it on an unwilling patient, for, should any untoward circumstance arise, the chloroform will be sure to get the credit of it. In the next place, the cases that apparently require it most,—tedious and difficult labours,—are those where it often appears to be injurious, by weakening the pains, and relaxing the muscles of animal life. But, on the other hand, I must say that I have never met with a single untoward circumstance affecting the health or life of either mother or child, that would in the slightest degree deter me from giving it where I thought it desirable or necessary. I have never witnessed any of the dreadful evils described by some writers as consequent upon its use; I have never seen the blood blackened, or the brain poisoned; nor has it ever, in my hands, induced convulsions, partial paralysis, or other still more formidable consequences; and until it does I

will consider myself justified in still further investigating the subject, ever bearing in mind the maxim of Lord Bacon, that the labours of all who think ought to be to multiply human enjoyment and to mitigate human suffering; and that, for this purpose, we must observe and reason only from what we see.

We have yet to give the result of our experience in preternatural, instrumental, and complex labours; and this part of the subject I approach with much more of pleasurable feeling, because that here I anticipate no difference of opinion, nor will we require either eloquence to adorn or argument to enforce the practical points to be elucidated; the mere recital of the cases will, I am sure, carry conviction to every candid mind.

PRETERNATURAL LABOURS.

Preternatural presentations of the upper extremities are at all times dangerous, as they call for a difficult and hazardous operation, involving, perhaps, the life of both mother and child; an operation which the most experienced practitioner undertakes with no small degree of anxiety, deeply impressed, as he must be, with the responsibility thrown upon him at such a time. It requires judgment and skill to know how to conduct such a case, when to interfere and when to remain passive; and he who undertakes it requires a clear head and a steady hand. How sad the fate of a patient in such circumstances who falls into the hands of a bold, untaught practitioner, who, ignorant of the dangers by which he is surrounded, and unmindful of the sacred charge committed to his trust, blindly rushes on to his own disgrace and the ruin of his hapless victim. How should we rejoice in the prospect of any remedy calculated to lighten the difficulties and lessen the dangers by which every such case is surrounded. Such an agent I believe chloroform to be; for if there is one operation more than another, in the whole range of midwifery, in which it is highly useful, it is that of turning; and if the discoverer of it accomplished nothing

more, he has by this alone conferred a great benefit upon mankind, and largely earned the gratitude of his profession.

Case XV.—Margaret M'Cormick, aged 22; second pregnancy. Two days ago she was suddenly seized with a severe flooding, which again came on early this morning. On examination it was found to be a case of partial placenta prævia, and as there was still some hemorrhage, the membranes were ruptured. At the end of six hours the os had considerably dilated, but the head was very high up, and, as there was still some draining, which greatly exhausted the patient, she was put under the influence of chloroform, and delivered by turning, with great ease. The child was still-born, she had no after hemorrhage, and her recovery was good, considering the amount of blood lost; she went home well on the sixteenth day.

Case XVI.—Martha Reddy, aged 24; fifth pregnancy; a twin case. The first child a head, the second a shoulder presentation, but the pains were so strong and frequent in the latter, that I found it impossible to introduce my hand. She was now put under the influence of chloroform, when all became passive, and turning was accomplished with the greatest possible ease, the child being born alive. She had no hemorrhage, and went home well on the eighth day.

Case XVII.—Anne Donelly, aged 34; fourth pregnancy. Elbow presentation; she was put under the influence of chloroform, and delivered by turning; child alive; no hemorrhage; discharged well on the eighth day.

Case XVIII.—M. M'Guiness, aged 27; second pregnancy; twin case; the first child presented a breech, the second a shoulder. Delivery in the latter was effected by turning, the mother at the time being in a state of anæsthesia. Both children were born alive; no hemorrhage; discharged well on the twelfth day.

Case XIX.—E. Mulrooney, aged 36; second pregnancy; had been thirty hours under the care of a midwife. The arm and funis were both protruding through the os externum on

admission; the funis had ceased to pulsate, and the patient herself was in a very exhausted state. She was put under the influence of chloroform, and delivered by turning, with great ease; child still-born; no hemorrhage; recovery excellent; she went home well on the eighth day.

Case XX.—Mary Lynam, aged 35; eighth pregnancy; shoulder presentation. As soon as the os was fully dilated she was put under the influence of chloroform, and delivered by turning; child born alive; no hemorrhage; discharged well on the eighth day.

Case XXI.—Anne Stephenson, a soldier's wife, aged 25; first pregnancy. States that her labour commenced on the previous day, while travelling from Limerick to Dublin by railway. It was found to be an arm presentation; membranes had ruptured, and the hand was in the vagina. Chloroform was then administered, but she was very slowly affected by it. While inhaling, the pulse became very weak, and she gave no signs of consciousness; the chloroform was therefore discontinued as soon as turning was effected, which was easily accomplished: but great difficulty was experienced in extracting the head, which ultimately had to be lessened by the perforator.

Immediately on the birth of the child the respiration of the patient ceased, and the pulse became imperceptible, but whether from exhaustion or the influence of chloroform we could not say. The application of cold water to the face, and patting her on the cheek, soon revived her, and she went on favourably for some days; but diarrhœa, with extensive inflammation of the mucous membrane of the ileum, set in, and she died on the fourteenth day after delivery.

Case XXII. Margaret Sidebotham, aged 30; second pregnancy; elbow presentation; delivered by turning, while under chloroform; child alive; no hemorrhage; recovery good. Discharged on the eighth day.

Case XXIII.—Catherine Whelan, aged 24; first pregnancy; elbow presentation; delivered by turning. This woman could

not be got under the influence of chloroform; it neither produced insensibility, nor did it diminish the severity of her sufferings from the labour pains or during the operation. The child was born alive. She had no hemorrhage, and was discharged well on the ninth day.

To the foregoing I may add the following case, which occurred in private practice :—

Case XXIV.—In April, 1848, I was sent for some miles from town to see Mrs. M. I found the arm protruding through the os externum, and learned that she had been in this state for some hours before my arrival. She was immediately put under the influence of chloroform, and delivered by turning. She was in a perfect state of anæsthesia at the commencement of the operation, but, not having a person present who knew how to administer the chloroform properly, consciousness returned just as the child was being born. She had no hemorrhage, and her recovery was good.

Such is an outline of ten cases of turning, upon which I scarcely feel it necessary to make any observations, so well do they themselves testify to the good effects of chloroform in all such cases. Three of the children were still-born, but the chloroform is in no way chargeable with their death, as in one case, that of partial placenta prævia, the child evidently perished from the loss of blood sustained previous to delivery.

In Mulrooney's case, No. xix., the funis came down with the hand, and had ceased to pulsate before she came into hospital. Had we been ignorant of the use of chloroform, it is probable that delivery would have been effected in this case by eviscerating the chest, a most disagreeable operation, exceedingly distressing to the patient, and disgusting to the attendants. In the third case, that of Stephenson, No. xxi. it was necessary to lessen the head, and of course chloroform was not the cause of death. In this case a question may arise respecting the state of syncope which came on immediately after delivery; was it induced by the chloroform, or the result of exhaustion after the

operation, in a frame naturally delicate, and much weakened by previous fatigue and anxiety of mind? This is a point we cannot determine, but the impression made at the time was, that the chloroform had an influence on it, at least to some extent; and that it had no part in ultimately causing death, the *post mortem* appearances fully proved. No case that I have ever witnessed impressed me so deeply with the advantages of chloroform, as that of Reddy, No. xvi., one of the twin cases. When I first attempted to turn I completely failed, owing to the strength and frequency of the pains, but the moment the state of anæsthesia was induced, all resistance ceased, and the operation was accomplished with perfect ease.

Such is our experience of chloroform in cases of turning; and so completely is the Master of the hospital impressed with the value of it, that he administers it before turning as regularly as he should employ the perforator before extracting with the crotchet.

We now come to instrumental deliveries, comprising crotchet and forceps cases; and here I must apologize for detailing so many cases, all so much alike, but nothing short of this would do justice to the subject.

CROTCHET CASES.

Case XXV.—Bridget Clinton, aged 38; first pregnancy; labour tedious; delay in the first stage from rigidity of the os uteri, and in the second from want of space. The ordinary remedies failing, and the fœtal heart having ceased to pulsate, she was delivered by the crotchet while in a state of anæsthesia, after having been sixty hours in labour. Her recovery was good, and she was discharged well on the eighth day.

Case XXVI.—Rose Conlan, aged 36; first pregnancy. First stage of labour remarkably slow; os not dilated for first forty-eight hours. The second stage ran on for twenty-four hours longer; delay arose from inertia and disproportion, the

pains being weak, while, at the same time, the head was so impacted that the forceps could not be introduced. She was, therefore, delivered by the crotchet while in a state of anæsthesia, after having been seventy-two hours in labour. Her recovery was good, and she left the hospital well on the eighth day after delivery.

Case XXVII.—Catherine Lalaway, aged 34; third pregnancy. States that both her former children were still-born. There is some deformity of the pelvis, apparently the result of disease. After being seventy-two hours in labour, the head all the time remaining above the brim of the pelvis, she was delivered by the crotchet. Great difficulty was experienced in getting down the head, the patient all the time complaining of the pain induced by the extractive force used. At this stage of the operation she was put under the influence of chloroform for the first time, and with the happiest effect, as it not only relieved the sufferings of the patient, but relaxed the soft parts, and facilitated the delivery to an extent that could not have been anticipated. She had no hemorrhage; her recovery was good, and she went home well on the eighth day. I should remark that her labour was not continuous or severe, nor was it attended with any constitutional disturbance.

Case XXVIII.—Rose Ward, aged 37 ; tenth pregnancy. The funis came down with the head, and had ceased to pulsate; she was, therefore, delivered by the crotchet while under the influence of chloroform, after being twenty hours in labour. No hemorrhage; discharged well on tenth day.

Case XXIX.—B. Brown, aged 19; first pregnancy. First stage of labour, which had lasted fifty-two hours; delay from rigidity of the os, apparently brought on by too early rupture of the membranes. When in the second stage, the pains being weak, two doses of ergot were administered, but without effect. She was then put under the influence of chloroform, and delivery was attempted by the forceps, but it could not be passed

up. She was, therefore, delivered by the crotchet while in the state of anæsthesia. No hemorrhage; discharged well on ninth day. She was altogether sixty hours in labour.

Case XXX.—Alicia Higgins, aged 30 ; first pregnancy; forty hours in labour; delay in second stage from want of space. She was put under chloroform, which had the effect of weakening the pains; she then got three doses of ergot, but with little effect ; there was very little increase of pain, nor did the child make any advance. The forceps were now tried, but the blades could not be passed up. At the end of twelve hours, the child being still alive, the forceps were again tried, but in vain; and as the woman appeared exhausted, while at the same time the fœtal pulsations were scarcely audible, delivery was effected by the crotchet, the state of anæsthesia having been again induced. Her recovery was slow, and she did not leave the hospital until the sixteenth day after delivery.

Case XXXI.—W. Freymouth, aged 34; first pregnancy. The pains weak; labour very slow. Stimulating enemata and ergot of rye were given, but without effect. The fœtal heart having ceased to pulsate, she was delivered by the crotchet, while under the influence of chloroform. Her recovery was very slow, and she did not leave the hospital until the twenty-second day after delivery.

Case XXXII.—Maria Byrne, aged 28 ; first pregnancy; tedious labour ; delay in second stage from inertia. She was put under the influence of chloroform, which neither increased nor diminished the uterine action. Ergot was then given, when the pains increased considerably, both in frequency and force, but without any advance in the labour. The fœtal heart soon ceased to beat, and she was then delivered by the crotchet. She had a good recovery, and went home well on the ninth day.

Case XXXIII.—Sarah Timmins, aged 28; fourth pregnancy. Hemorrhage came on in the second stage of labour, when delivery was attempted by the forceps (the patient being under

the influence of chloroform), but failed, as the head was tightly impacted; the state of anæsthesia being still kept up, delivery was effected by the crotchet; no hemorrhage followed; convalescence tedious: discharged on the twenty-fifth day.

Case XXXIV.—Jane Leeson, aged 22; first pregnancy. This woman was in a state of great debility from want of proper sustenance; labour tedious; when thirty hours in labour, fœtal heart not being audible, chloroform was administered, and she was delivered with the crotchet. Peritonitis set in on the second day, and she died on the sixth.

Case XXXV.—Anne White, aged 30; second pregnancy; was brought from the country after having been thirty-two hours in labour. The bladder was so distended as to reach above the umbilicus, and a slough had already formed at the neck of it. She was put under the influence of chloroform, and delivered by the crotchet; no hemorrhage. She is still in hospital for vesico-vaginal fistula, the result of the sloughing.

Case XXXVI.—Mary Kane, aged 18; first pregnancy. A small, deformed woman, with angular curvature of the lumbar vertebræ; sacrum very straight, and the pelvis much deformed. After being twenty-three hours in labour, chloroform was given, and she was delivered by the crotchet with considerable difficulty. No hemorrhage followed, but peritonitis supervened. How the case terminated we cannot say, as she was forcibly removed from hospital by her friends on the seventh day.

On these cases in which delivery was effected by the crotchet, while the women were in a state of anæsthesia, we have scarcely a remark to make. The necessity for using it is not so great as in forceps cases, neither, perhaps, are the advantages so obvious, as the operation can generally be performed without much pain to the patient, and, in careful hands, with a very small amount of danger; at the same time, when we take into account the mental anxiety inseparable from such an occasion, and when we reflect how injurious any shock, mental or bodily, may then prove, I feel assured that we will seldom err

in using chloroform, and that in the great majority of such cases it will be found a valuable adjunct in rendering the patient more manageable and the operation more easily performed, independent of any advantage it may possess with reference to ultimate recovery. In two of the crotchet cases, the patients were attacked with puerperal fever, one of whom died in hospital, and the other was forcibly removed by her friends, as already stated. Its effect in the case of Lalaway, No. xxvii. who had deformity of the pelvis, was very striking. It was not given until great difficulty was experienced in bringing down the head with the crotchet, the patient at the same time complaining greatly of the pain produced by the traction. At this stage of the operation she was thrown into a state of anæsthesia, after which the head was brought down with about one-half the force that had been previously used, and without any pain to the mother. The rapid recovery of the patient proved that no undue force had been used, and that the soft parts had not been injured. In none of these cases had we hemorrhage to contend with, nor did any untoward symptom arise, either at the time of the operation or subsequently, that could be ascribed to the chloroform. There is one other point that I would here wish to direct attention to, namely, the giving of ergot with chloroform. In some of the cases this practice was adopted, and in one or two with marked effect, as it produced a decided increase in the pains, though not sufficient to complete the labour. The same practice was adopted in other cases, not now under consideration, with the best results; and in no case did it seem to do harm. Combining ergot of rye with chloroform may, therefore, be considered both safe and judicious where circumstances call for it(*a*).

(*a*) Since this paper was read before the Obstetric Society, Professor Beatty confirmed the value of the practice by reading some cases of a similar nature to the Society.

FORCEPS CASES.

Case XXXVII.—Bridget Kelly, aged 36; fifth pregnancy; states that she has always had tedious and difficult labours. The pains were very violent, but with little advance in the labour; she continued much in the same state for some hours, when chloroform was administered; the pains then became less severe, but by no means more efficient; and the head being now in the pelvis, she was delivered by the forceps, with some little difficulty. Child born alive; no hemorrhage; recovery good.

Case XXXVIII.—Eliza Hughes, a weak, delicate-looking woman; first pregnancy. The pains were weak, and the labour slow, with very little prospect of any improvement. At the end of thirty hours she was delivered by the forceps, while under the partial influence of chloroform. She offered great resistance to the introduction of the instrument, and was delivered with considerable difficulty, owing to her violent opposition, consequent upon her state of semi-insensibility. The child, however, was born alive; she had no hemorrhage, and went home well on the tenth day.

Case XXXIX.—Catherine Ryan, aged 34; second pregnancy. Labour tedious from inertia, for which she got stimulating enemata and ergot, but with little advantage. At the end of fifty hours she was put under the influence of chloroform, and was delivered by the forceps. The child was born alive, but appeared weak; no hemorrhage: her recovery was slow, and she did not leave the hospital until the twenty-fifth day.

Case XL.—Susan Daly, aged 28; fourth pregnancy; pains very weak; intervals long; treatment same as in the last case, and with the same effect. After being in labour twenty-seven hours, she was delivered by the forceps, while in a state of anæsthesia. Child born alive; no hemorrhage; recovery good; discharged well on eighth day.

Case XLI.—Hannah Singleton, aged 21; first pregnancy; thirty-two hours in labour. She was delivered by the forceps

while under the influence of chloroform, which had a very happy effect; child alive; no hemorrhage; went home well on the eighth day.

Case XLII.—Mary Sutton, aged 24; labour tedious from inertia. The ordinary remedies failing, she was delivered by the forceps while under the influence of chloroform, after having been forty hours ill; child alive; no hemorrhage; went home well on the eighth day.

Case XLIII.—Margaret M'Mahon, aged 23; first pregnancy. She was also delivered by the forceps while under the influence of chloroform, after forty hours of labour. On the fifth day she was attacked with puerperal fever, which was then prevalent; and on the thirteenth day her mother forcibly removed her from hospital, although very ill at the time. She was reported to have died in two days after her removal.

Case XLIV.—Bridget Hicky, aged 26; first pregnancy. She was a very troublesome, noisy patient; and as the labour was making very little progress, she was, at the end of twenty hours chloroformed, and delivered by the forceps. Child born alive; recovery good; she was discharged well on eighth day.

Case XLV.—Ellen Hughes, aged 30; first pregnancy; twin case; labour tedious, from inertia, the result of over-distension of the uterus. She was put under the influence of chloroform, and got three doses of ergot, but without any effect. After being twenty hours ill, she was delivered of both children by the forceps, while in a state of anæsthesia. An interval of an hour was allowed to elapse between the birth of the first and second child, during which she became conscious, but without a return of uterine action sufficient to expel the second child. She had a smart attack of hemorrhage after the placenta came away; her recovery, however, was good, and she went home well on the ninth day.

Case XLVI.—Bridget Nowlan, aged 30; first pregnancy. A twin case; the first, a footling, of which she was delivered while in a state of anæsthesia. The child was large, for a twin,

and great difficulty was experienced in getting away the head; it was born alive, however. The second a head presentation; the pains were so weak that ergot was administered, but with little effect; she was then delivered by the forceps, chloroform having been again administered. The child was still-born; no hemorrhage, but recovery slow, as there was some sloughing of the vagina. She did not leave the hospital until the twenty-ninth day.

Case XLVII.—Anne White, aged 23; first pregnancy; forty hours in labour; delay from inertia, for which she got ergot, but with little advantage. She was delivered by the forceps while under the effects of chloroform; child alive; no hemorrhage; discharged well on the eighth day.

Case XLVIII.—Bridget Lanigan, aged 26; first pregnancy; thirty-four hours in labour. The history and treatment same as in the last case; she also went home well on the eighth day.

Case XLIX.—Jane Short, aged 23; first pregnancy; thirty-eight hours in labour; delivered by the forceps while under the influence of chloroform; child alive; no hemorrhage; convalescence tedious, owing to sloughing of the vagina; discharged on the twenty-fourth day.

Case L.—Sophia Graham, aged 34; sixth pregnancy; tedious labour, from inertia, for which she got ergot, but without effect; delivered by the forceps while under the influence of chloroform; child alive; no hemorrhage; discharged well on the eighth day.

Case LI.—Mary Doyle, aged 28; second pregnancy; funis presented with the head; delivered by the forceps while under the influence of chloroform; child alive; no hemorrhage; recovery good.

Case LII.—Mary Fox, aged 34; first pregnancy; tedious labour; ergot administered with little advantage; delivered by the forceps; chloroform employed; child alive; no hemorrhage; recovery good.

Case LIII.—Margaret Ward, aged 30; first pregnancy; thirty-six hours in labour; history same as last case; forceps used and chloroform employed; discharged well on the eighth day.

I have thus given a rapid outline of all the forceps cases in which chloroform was administered, and not only were the operations facilitated, but the sufferings of the patients greatly diminished, by its use; while the recoveries on the whole were above the average in such cases. In the two first-mentioned cases, either from the chloroform not being good (its purity being a most important point to attend to), or from our want of experience in the mode of administering it at the time, the patients were not got into a state of perfect anæsthesia before the operation; we therefore experienced considerable difficulty from their restless opposition while in a state of semi-insensibility. In one of the twin cases there was an attack of hemorrhage after the expulsion of the placenta; but this I do not think could be ascribed to the chloroform. In the other twin case there was great difficulty in bringing down the head of the first child, a footling, and there was a considerable interval between the birth of that and the second. Was the chloroform the cause of this delay? Doubtless in some cases the pains are diminished in frequency and force, and may even be completely put a stop to during the state of anæsthesia, but they generally return with increased vigour as soon as the state of insensibility passes away. In the present case the chloroform was discontinued from the birth of the first child until the forceps were about being applied to extract the second.

We have only one death to record, that of M'Mahon, Case xliii., who died from puerperal fever, on the fifteenth day after delivery. Her removal from hospital contrary to the wishes, nay the entreaties of the Master, doubtless hurried on the fatal event. This unfortunate female was the victim of seduction; I need scarcely say how susceptible of disease such females

are, and how almost invariably fatal this disease proves to patients under such circumstances.

Of the children,—where ergot had been given,—one, a twin, was still-born. Two of those born alive died in hospital, one on the fifth day, the child of a woman who had also taken ergot and was fifty hours in labour. The second was the child of a patient who left the hospital in puerperal fever; it died on the eighth day. A review of the cases given will, I think, prove, even to the most sceptical, that chloroform is not only admissible but highly beneficial in forceps cases.

CONVULSION CASES.

I now come to the last variety of labour in which we used chloroform. I need scarcely say it was not given for the purpose of either preventing or putting a stop to the fits, but as the patients were generally conscious in the intervals, and showed no symptom apparently prohibiting its use, we thought it right to give it a trial, carefully watching its effects in such cases.

Case LIV.—Jane Baily, aged 33; first pregnancy; at the termination of the first stage of labour she was seized with a fit of convulsions for which she was bled, &c. Sensibility soon returned, but there was very little advance in the labour. Five hours after the fit she got two doses of ergot, but with little effect; in seven hours from the time she took the ergot another fit came on from which she soon recovered under the ordinary treatment. As the pains had now almost entirely ceased, and as it was doubtful whether the child was alive or not, she was put under the influence of chloroform, and delivered by the forceps of a female child, still-born. The fits did not return; she had no hemorrhage; her recovery was good, and she went home well on the tenth day.

Case LV.—Eliza Brady, aged 19; at 2 o'clock, p. m., she was seized with a fit of convulsions, which was followed by another in ten minutes. She was bled to twenty ounces; and had a

fetid enema with oil of turpentine administered. Consciousness soon returned, and the labour went on more favourably; at 3 o'clock the os almost fully dilated, but the head very high up; pulse 144; fœtal heart only 108. Chloroform was now administered, and she was kept in a state of anæsthesia for fifty minutes, during which the pulse came down to 84; fœtal heart 120; pains very weak, and inefficient. The chloroform was now discontinued, and consciousness soon returned. In twenty minutes after discontinuing the chloroform, she had a very severe fit, followed by stertor and great increase in the quickness of pulse. 5 o'clock, another very severe fit, which lasted four minutes. At twenty minutes after 5 o'clock, fœtal heart being still audible, chloroform was again given, and delivery attempted by the forceps, but without success. Twenty minutes to 6 had vomiting, grinding of the teeth, and spasmodic rigidity of the fingers. As another fit was apprehended, she was delivered by the crotchet; the placenta followed in a quarter of an hour, without hemorrhage. At half-past 6, and again in four hours, convulsions returned. On the following morning, the report was, that she had four fits during the night; pulse 120; very weak; still insensible. Ordered calomel and ipecacuanha, with light nourishment. She gradually sank, and died on the fourth day. No *post mortem* was allowed.

Case LVI.—Eliza Stewart, aged 25, a delicate-looking woman; first pregnancy; she was fretful, and seemed in great distress during the pains. When about thirty-six hours in labour, chloroform was administered, and she was kept in a state of anæsthesia for nearly an hour, during which the pains diminished in frequency and force; it was, therefore, discontinued, after which she slept for a good while, and awoke refreshed. The pains now returned with increased force, and the child was born in three hours from the time she awoke. Some minutes after the birth of the child, she had two or three short convulsive fits, for which some blood was taken from the arm;

the fits did not return, and she slept for several hours, but seemed very low and weak when she awoke. She gradually sank, and died in twenty-four hours after delivery. There was no lesion found in the brain or any other part of the body, and the impression at the time was, that she had died from exhaustion, consequent on the fits, combined with a tedious and distressing labour in a delicate woman.

Such is a short report of the only convulsion cases in which we used chloroform. As I before remarked, our object in giving it was not to prevent or put a stop to the fits, but simply for the purpose of mitigating the sufferings of the patients, or advancing their labours. In the first case it was given with the view of saving the patient the fear and pain incidental to all forceps operations, and in this it succeeded admirably. The second case is one of considerable practical interest, but I shall confine myself to the subject in question, namely, the giving of chloroform. That it did not induce the convulsions is evident, nor did we ever meet with a case where such a result could be attributed to it; although many theorists have set it down as a consequence likely to follow. It did not put a stop to the fits, but it certainly served, in the first instance, to control them, at least for a time. I do not say that it lessened them either in number or intensity, nor can it be said, on the other hand, that it favoured their continuance, or tended in any way to the fatal result. In the third and last case mentioned chloroform was given with the view of relieving the great distress complained of, and of relaxing the soft parts. These two objects were in a great measure accomplished during its employment, for although the pains greatly diminished while the patient remained in a state of anæsthesia, and entirely ceased during the interval of sleep, yet they were all the more vigorous afterwards, and literally accomplished more during the last three hours than had been effected in the twelve preceding ones. The whole history

of the case tends to the probability that the chloroform had nothing to do with producing the fits, nor was it, I feel convinced, in any way the cause of death.

These cases, I think, do not afford any evidence that chloroform is calculated to bring on convulsions, nor that it will increase the number or add to the severity of the fits when they have already set in. Our experience is as yet too limited to enable us to decide upon this point; but, with our present amount of knowledge, we would neither recommend it as a preventive or a cure for puerperal convulsions. If there was no organic disease present, nor any determination to the head in the intervals, we would not fear to administer it where circumstances seemed to indicate its use, or when called upon to perform the operation of turning, or delivery by instruments in a case complicated with convulsions.

I could greatly enlarge this communication, as I have before me notes of several other cases not mentioned; but as they were not taken very accurately, I think it better not to record them here.

In one case the pulse was intermitting, so as to induce us to give up the use of the chloroform. In another the muscular exertions became so violent that it was found necessary to restrain the patient, although calm and passive before. In two instances mentioned to me by my friend Dr. Johnson, my successor in the hospital, and to whom I am much indebted for the valuable assistance he so kindly afforded me in procuring some of the materials for this paper(*a*), the patients could not be brought into a state of anæsthesia by any amount of chloroform that it was thought prudent to administer, although they were really anxious for it. In several instances we could not prevail upon the patients to continue the use of it beyond the stage of excitement. Some were afraid we were about to try a great

(*a*) I am also under deep obligations to Dr. Ormerod, who was then in attendance at the hospital, for much valuable assistance in collecting the materials for this report.

experiment on them, or perform some terrible operation. Others imagined that it was an intoxicating drug, and, having taken the pledge, could not be prevailed upon to use it. One poor woman threatened to bring an action against the assistant on duty, for attempting, as she said, to take away her character by making her drunk. Another said to me: "Now, Doctor, you think it is one of your old drunkards you have to deal with, but you may be easy, I'll take no more of your stuff." Another, who required a very large quantity to affect her, became very loquacious, and spoke of her domestic broils and money matters. But in no case did we hear an immodest remark, or one calculated to offend the most delicate ear; nor did we ever observe the slightest approach to sexual excitement. We are, therefore, inclined to receive with caution the disgusting details and indecent stories told of patients while under the influence of chloroform.

With but one exception, we had no case of retained placenta after chloroform, nor had we reason to think that it predisposed to hemorrhage; on the contrary, we were impressed with the idea that the number of hemorrhagic cases where chloroform had been given was rather below than above the average in ordinary practice.

The contractions of the uterus after delivery were not impaired, nor did the chloroform in any of the cases appear to give rise to hemorrhage.

From what I have seen of chloroform I do not think that its use should be so restricted as Dr. Montgomery, in his valuable paper lately published in this Journal, would have us believe; nor have I witnessed the fearful results so graphically described by him as likely to follow from its use. Whilst I admit that some of the advocates for chloroform have been too lavish of their praise; on the other hand, I think that those opposed to it have been too unsparing in their censure. A middle course will be found the safest.

I consider it an agent powerful for good in many cases, yet

in rash and inexperienced hands it may, and I fear often does, prove equally powerful for evil. That it may be and sometimes is given for the purpose of amusing patients, and making them believe that they are saved from a vast amount of pain, when in reality they have scarcely inhaled a single breath of it, I doubt not. If we give it fairly and honestly, we must be prepared either to spend a much longer portion of time with our patients than we do at present, or intrust them, while in a state of anæsthesia, to the care of others during our absence. How any one in extensive practice can give up the time necessary for this plan of treatment I am at a loss to know, and yet some of our first and best accoucheurs boast that they use it in every case.

This report, I conceive, will bear us out in drawing the following conclusions:—

First. That chloroform is a most valuable agent in all turning, forceps, and crotchet cases.

Secondly. In some cases of natural or difficult labour it is useful in relieving pain, and in relaxing the soft parts, and thereby advancing the labour.

Thirdly. If given in large quantities, or if persevered in too long, it puts a stop to all muscular action. This is contrary to the opinon of Dubois, who states that it never destroys the uterine contractions, or those of the abdominal muscles.

Fourthly. In such cases the pains generally return with increased force when the chloroform is discontinued.

Fifthly. It does not relax the perineum more than the other soft parts. Dubois states that it does.

Sixthly. When organic disease does not contra-indicate its use there is little danger to be appprehended from it in midwifery practice.

Seventhly. Chloroform may be administered to such a degree as not to take away reason and consciousness, and yet to secure the patient immunity from pain.

The mode of administering it in the hospital is by means

of a hollow cone formed out of a piece of spongeo-piline sufficiently large to cover the mouth and nostrils; to prevent it from collapsing, a few ribs of whale-bone are fastened on the outside, and over these there is a covering of fine leather. This method is both simple and efficient, as proved by our almost uniform success in producing the desired effect with a much smaller quantity of chloroform than is generally used(*a*). Professor Simpson says, that usually when the handkerchief is used about an ounce per hour is necessary; some require less and some more. In one case lately, a first pregnancy, he states that he expended nearly six ounces in two hours. In the

(*a*) At the conclusion of Dr. Denham's report, Dr. Fleming exhibited and described an apparatus which he had constructed for the purpose of administering chloroform, and which he had used most extensively for some months past. This consists of a small capsule of glass, with an overlapping edge. The capsule is circular, and about two inches and a half in diameter. Within it is placed a small slice of sponge, which, when the apparatus is about to be made use of, is saturated with chloroform; and this he styles the "chloroform sponge." Round the neck of the glass a large cup-like sponge, hollowed out, and so shaped as to cover the nose and mouth, is attached. Through the pores of this sponge the atmospheric air is admitted. Before use, both sponges are damped with water, and then the proper measure of chloroform is poured upon the small flat sponge contained within the capsule.

Dr. Fleming made a communication upon this subject to the Surgical Society upon the 28th April last.—(See his paper in the Proceedings of the Surgical Society.)

We have very frequently seen Dr. Fleming employ this apparatus, and have had his valuable assistance with several patients of our own; and we feel great pleasure in stating that his method of throwing patients into a state of anæsthesia with chloroform very far exceeds in ease, simplicity, and certainty, any other means which we have witnessed. We may mention here the necessity of allowing the patients to partake but very sparingly of food before the administration of chloroform, as, if a hearty meal has been recently taken, vomiting is almost sure to follow, a symptom at all times particularly distressing, and especially inconvenient during the performance of operations about the face. From the attention which Dr. Fleming has devoted to this subject, and his extensive experience of the use of anæsthetic agents, both in public and private, we anticipate with much interest a Report upon the subject, which he has promised us for our next Number.—Ed.

Dublin Lying-in Hospital we rarely use more than one ounce in that length of time, and very generally less.

In conclusion I may remark, that since the first part of this Report was sent to Press, I have read a pamphlet by Mr. Gream, upon "The Misapplication of Anæsthesia in Childbirth, exemplified by Facts," in which a number of fatal cases are given under the head of "deaths after delivery." An examination of the records of these cases, however, has convinced me that the deaths, in the great majority of instances, were not at all caused by the use of chloroform. He records a case of twins, where chloroform was administered before the second child was born, and the lady "survived the birth only for a period less than an hour;" but there are no other further details given, which certainly were required in recording the history of such a lamentable result. Another was a case of natural labour, in which the female "died at about the end of the second week from her delivery, never once having rallied from the effects of the chloroform." Two of the cases were those of ruptured uteri,—one a case of turning; and the other a forceps case, where there was laceration of the neck of the uterus, and sloughing of the vagina. A case where the patient died from sloughing of the "maternal passages," the result of long impaction, will be found among the fatal cases attributed to chloroform. Two were cases of convulsions; in one the fits came on six hours after delivery, and the patient survived for six days. In the other instance the fits came on twenty-five hours after delivery; the woman lived but thirty-eight hours after the first attack.

Six of the cases, two of which are taken from Dr. Simpson's report, died of puerperal fever coming on about the average period after delivery. In one of these cases it was caused by the rupture of a tumour that was attached to the peritoneal coat of the uterus, and in another it came on after a fit of convulsions, the result of a fright received some days after delivery. Two more of these deaths from puerperal fever are taken from the report of Baron Dubois. In these the for-

ceps had been employed, and ether was the substance used to cause anæsthesia.

Two cases of puerperal mania, one of which died on the ninth day after delivery, and the other in a lunatic asylum, at the end of fifteen weeks, are set down under the head of deaths from chloroform. It is unnecessary to recite these cases at greater length. I feel convinced that every unprejudiced practitioner, conversant with midwifery practice, will at once repudiate the idea that chloroform was the cause of death in these cases of sloughing vagina, ruptured uterus, convulsions, puerperal peritonitis, and mania, &c., of which I have given a brief summary. The length to which this report has already extended precludes my entering at greater length into an examination of the cases and opinions set forth by the author just quoted.

We have yet much to learn about anæsthetic agents. Should my example induce others to follow up the subject I shall feel satisfied. The object of all interested in this question ought to be, and I am sure is, to benefit mankind. However much, therefore, we may differ upon this or any other subject, I trust we shall ever be found debating, not as the briar with the thistle, which can wound the deepest, but as the olive with the vine, which can bear the best fruit, and which most mitigate the sufferings of fallen humanity in the hour of nature's trial.

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PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Parturition and the Principles and Practice of Obstetrics. By W. Tyler Smith, M. D., Lecturer on Obstetrics in the Hunterian School of Medicine. London, J. Churchill. 8vo., pp. 395. 1849.

A new Method of treating Sterility by the Removal of Obstructions of the Fallopian Tubes. By W. Tyler Smith, M. D. Tract, pp. 16. London, printed by Savill and Edwards.

Up to the present time, it must be admitted, that the physiology of the generative system has been in a most unsatisfactory state. No doubt we have had explanations of the different functions of menstruation, conception, gestation, and parturition; but these have been often erroneous, often imperfect, and always isolated. We have had no philosophical view of these functions as a whole, no illustration of their idea, nor expression of their unity.

The work before us, by Dr. Tyler Smith, is an attempt, and, we are bound to say, a singularly successful one, to establish and develope the law which governs all these functions, by applying to their explanation the principle of reflex action, discovered by Dr. M. Hall. It would appear that most of the ovario-uterine phenomena are reflex acts; these organs communicate with the spinal marrow by nervous arcs, which transmit impressions from the incident surfaces to the spinal marrow, and reflect motor influences from that centre. Some of these excito-motor arcs communicate with a limited portion of the spinal marrow, others with a great extent; and their influence occasionally involves the cerebrum (at least pathologically), as well as the tubercula quadrigemina, and medulla oblongata.

After this brief introduction, let us turn to the author's ap-

plication of these discoveries to midwifery: "Uterine motor action," he observes, "and the action of the accessory muscles concerned in parturition, with the knowledge of the nature and laws of the forces upon which these actions depend, are the dynamics of parturition."

The different forms of uterine motor actions are the voluntary, the emotional, the reflex, and the peristaltic. The will can, of course, exert no influence upon the uterus under ordinary circumstances; during parturition, certainly, voluntary efforts are brought to bear indirectly upon the womb, and to increase its expulsive action; we also know that emotion, acting through the medium of the spinal marrow, has a powerful influence upon the uterus: but upon these we shall not dwell, as we are anxious to arrive at Dr. Tyler Smith's illustrations of the reflex actions. He observes:

"Reflex actions of the uterus are very numerous, and it is upon them and the numerous extra-uterine reflex actions excited during the process, that the natural performance of parturition essentially depends. Contraction of the uterus from irritation of the mammæ, as in the act of suckling the child; contraction of the organ from the cold water douche applied to the vulva or abdominal surface; contraction excited by irritating the rectum, as by stimulating enemata; or of the stomach, by drinking a gulp of cold water; of the ovaria, by the presence of the menstrual nidus; of the vagina, by manual irritation, as in 'taking a pain;' of the os uteri, by irritation, as in the introduction of the hand into the uterus;—are all to be considered as so many instances of reflex spinal action. Thus, in parturition, the uterus may be excited in a reflex form by irritation of the mammary incident excitor nerves, the pubic and abdominal branches of the intercostals, the rectal, the gastric division of the pneumogastric, the ovarian nerves, and also by the nerves of the vagina, and of the os and cervix uteri."—p. 34.

But, besides the uterine reflex actions, we have another series in the expiratory actions which come on during the second stage of labour, and which co-operate with the former, and augment their power. These, after labour has commenced, depend for their stimulus chiefly upon the ovum; the latter are excited by the pressure of the child in its passage through the vagina, in consequence of the more extended excito-motor communication of the latter organ.

The *peristaltic* or *immediate* action of the uterus is the radical basis upon which its other motor powers rest. As we all know, muscles may contract when subjected to irritation, although the communication between them and the cerebral and spinal centres has been cut off, and this motion is of a peristaltic kind:

"The uterus is eminently endowed with this form of contraction. When one point of the uterus is stimulated through the abdominal parietes, the contraction excited extends with the utmost rapidity to the whole organ; the same occurs when the fingers are made to irritate any point of the internal surface of the uterus. Hervey beautifully described this peristaltic form of action in the uterus of the doe; William Hunter saw it in the cat and the rabbit; Professor Müller, in the uterus of the rat and the oviduct of the turtle. I have seen the same thing in the uterus of the guinea pig and other animals. This form of motor action is the basis of the other uterine actions. In natural labour in the human female, it is, so to say, disguised by the reflex actions; but, under certain circumstances, it is able to effect, unaided, the expulsion of the child."—p. 39.

The direction in which this peristaltic action acts has been a matter of dispute. Müller, Michaelis, Wigand, &c., believe that it commences at the cervix and extends to the fundus, thence returning to the cervix. Dr. Murphy reverses this order, and believes it to commence at the fundus. Dr. Tyler Smith agrees with the former opinion; but our space will not permit us to enter into this question, nor into that of the cause of dilatation of the cervix.

The Fallopian tubes possess two sets of muscular fibres, circular and longitudinal, and their action is of a peristaltic character. Under stimulation they become so turgid that Dr. Tyler Smith thinks they almost deserve to rank with erectile organs. They are also the seat of special excito-motor actions under certain circumstances; they have been observed to be closely applied to the ovaria in lower animals during the period of œstration; to the ovaria of women who have died during the period of menstruation; and our author thinks it probable that the same thing occurs during coition, as it does at the time the ovule passes from the ovary into the uterus. This must evidently be a reflex action.

As to the vagina:—the constrictor vaginæ we know possesses some voluntary power, and even the canal itself, to a slight degree; but its chief action is reflex, as we see when the canal is distended by a polypus, on the introduction of the speculum which it often grasps firmly, and especially in labour, after it has been fully dilated by the child.

Thus we have, as it were, a single genital canal from the ovaries, which is formed by the Fallopian tubes, uterus, and vagina, largely endowed with excito-motor nerves, and exhibiting partly peristaltic and voluntary, but throughout, reflex action.

But then comes the question, what is the *primum mobile* of this reflex action?—what is it that gives the impetus to the

different functions performed by these actions?—and if there be unity in generative physiology, what is the one originating power which influences, and controls, and stimulates all these functions?

Dr. Tyler Smith's answer is, that this originating and moving power resides in the ovaries; that they cause menstruation, conception, and parturition. Let us examine this a little. First, we may just mention, what is well known, that the ovaria, Fallopian tubes, uterus, and vagina, are liberally supplied with nerves, and that these nerves form a demonstrable communication between those organs. Dr. Tyler Smith also fully agrees with Dr. Lee, that the nerves of the uterus enlarge during pregnancy.

The ovarian influence upon menstruation may now be regarded as established; but it is very remarkable that Dr. Power, in 1821, anticipated by his explanation that which the more recent researches of Girdwood, Lee, Baer, &c., have almost demonstrated. Dr. Tyler Smith coincides in the opinion that menstruation is analogous to the oviposition of birds; and the conclusion to which he arrives is thus expressed:

"Menstruation is, in fact, the unimpregnated oviposition, while conception is the impregnated oviposition of the human subject. The analogy between menstruation and the oviposition of those amphibia and fishes which are impregnated out of the body is very close; in them, as in the human subject, the ovarian excitement and the extrusion of the ova are periodic, and may occur without the intervention of the male." "Menstruation is an ovarian rather than a uterine function, and it may be considered as the first act of human parturition; it is the parturition of the *ovule* instead of the parturition of the *ovum;* and it represents, with the exception I have already dwelt upon, the whole of the parturition in birds and in many fishes and amphibia. The mechanism by which the ovule is conveyed from the ovarium to the uterus I have explained in former lectures, viz., the reflex and peristaltic action of the Fallopian tubes."

Dr. Tyler Smith regards the œstration of animals and menstruation as analogous states; and assuming, upon rather scanty evidence, we think, the presence of sexual desire at these periods, is disposed to date the time of conception from the cessation of a menstrual evacuation, and upon this view has constructed a calendar of menstrual and parturient periodicity, which we noticed in a former Number. For various reasons, we are not quite prepared to admit this, although further investigation may convince us. We are rather disposed to regard the monthly ovarian excitement, and the development of the

Graafian vesicle, as preparations either for menstruation or conception: if the seminal stimulus be applied, for the latter; if not, for the former. According to this view, conception more frequently occurs, and is more likely to occur, just before a menstrual period, which it will prevent, than afterwards.

With regard to utero-gestation, Dr. Smith has found in its various phenomena of sickness of stomach, cough, tenesmus, cramp, &c., beautiful illustrations of reflex actions; and, in his observations upon the peristaltic motions of the uterus, has been led to believe that what are called the movements of the fœtus towards the end of pregnancy are really not produced by the fœtus at all:

"If the abdominal movements in the latter months of pregnancy are very carefully observed, two tolerably distinct kinds of motion may be made out. The one is a movement traversing irregularly over the abdomen, and conveying the sense of hardness either in ridges or in eminences underneath the hand. These movements are often felt at several points of the uterus simultaneously, and are accompanied by pains. When the hardness is most apparent, the patient will say that the child kicks and hurts her. These movements will, in some cases, continue for hours together, particularly at night. When very violent they give the idea of a blow, or a succession of blows, if the hand be laid upon the abdomen. The other kind of movement is distinct from that I have been describing; it conveys to the hand a sudden shock or impulse, like that obtained by repercussion in ascites, only stronger. The abdomen gives, as it were, a sudden shudder; it is like the quick and temporary movement of a young infant touched in its sleep. The first and most frequent of these movements I believe to be purely uterine; the second, fœtal, and to be felt only in undoubted pregnancy."

Dr. Tyler Smith has entered into an elaborate and very ingenious inquiry into the cause of the first uterine contraction in parturition; and, although we cannot follow him into the details, we shall endeavour to lay his conclusions before our readers:

"At the time of parturition," he remarks, "there is the *tendency* of the uterus to contract on the application of stimuli to be considered; besides this tendency or aptitude there are the particular actions really excited by the stimulus of the fœtus and other incidental stimuli. In any successful inquiry into the cause of labour, it must be necessary, at the threshold, to ascertain the cause of this first tendency to uterine contraction, after the organ has lain so nearly dormant during the whole time of utero-gestation."

He then proceeds to trace in the lower animals the connexion between ovarian excitement and motor parturient ac-

tion. It is seen in the frog, and in oviparous fishes, in insects and in birds, and lastly, in some of the mammalia, in whom the period of ovulation or expulsion is also a time of sexual and ovarian excitement. Next he proceeds to show that "parturition is essentially a menstrual period," nay, that it is not always without sexual excitement; and we know that both these states depend upon ovarian stimulation.

"Ovarian excitement is essentially the cause of all the acts of ovi-expulsion of the female generative organs. This obstetric dogma I would especially insist upon. The great body of facts and observations I have marshalled before you in the present lecture demonstrates most unequivocally, to my mind, that in all animals which deposit ova for fecundation out of the body, the ovaria supply the stimulus to the motor actions necessary to their expulsion. Next, that in those which expel impregnated ova, after they have remained a short time in the generative receptacle, it is a return of the same kind of ovarian excitement which conveyed the ovule from the ovarium to the receptacle that ultimately causes its expulsion; and, lastly, that when the ovum is expelled as a mature embryo, it is still ovarian excitement, at the return of an ovarian period, which brings about its delivery from the uterus." "Where the ovarium is anatomically severed from the rest of the sexual apparatus, as in the mammalia and human female, the ovarium is connected with the rest of the parturient canal by a series of reflex arcs. By means of the special excitor nerves of the ovaria, that portion of the spinal centre which presides over the actions of the uterus is, at the end of utero-gestation, thrown into a state of excitability or polarity somewhat resembling the general spinal excitability of tetanus." "The uterine nervi-motor system being thrown into such a state of persistent excitability that the uterus firmly contracts equably upon its contents, the fœtus itself, hitherto defended by the liquor amnii, becomes an ordinary excitor, and the reflex actions of labour are gradually established. The equable contraction of the uterus preceding labour is, in effect, just as though the membranes had been punctured in the operation of inducing premature delivery, and the head of the fœtus brought to exert pressure upon the os and cervix uteri."—pp. 122–3.

Thus Dr. Smith lays it down as an axiom that "ovarian excitement is the law of parturition in all its forms of ovi-expulsion." Nor are we prepared to deny this, although we do not see that he has explained how this ovarian excitement is cumulative up to the tenth menstrual period only, or why it is then so powerful as to originate labour. Nor are we quite sure that the facts he has adduced in evidence are sufficiently numerous or decisive to demonstrate the correctness of his view. We shall not, however, stop at present to argue the question,

but proceed with the development of our author's views of natural labour. He divides labour into five stages, each having peculiar physiological characteristics:—1, the preliminary stage; 2, that of dilatation; 3, that of propulsion; 4, that of expulsion; and 5, the extrusion of the placenta, &c.

During the preliminary stage the uterus becomes firm, defined, and ovoid, quite distinguishable from the abdominal parietes; the abdomen falls, as it is said, and the more remarkable movements occur, which Dr. Smith thinks is a proof that they are uterine, not fœtal. During this stage "the only excitor nerves involved are the ovarian; as yet the uterine motor nerves are quiescent." In the second stage, however, we have called into action not only the ovarian nerves but the nerves of the os and cervix uteri, and these only. The uterus itself is in a state of alternate active contraction and rest, and the os uteri actively dilating, according to our author, in addition to the passive dilatation by the amniotic liquor, &c.:

"Until the termination of this stage none of the other spinal functions are disturbed, except those of the rectum and bladder. The uterus is contracting and dilating alone. The portion of the spinal centre involved is the lower medulla; the medulla oblongata, or the functions over which it presides, not being at all affected."

But when the membranes are ruptured, and the head passes through the os uteri, a new series of nervous influences are evoked, and new motor phenomena arise; the nerves now implicated are the excitors of the expiratory acts of parturition, and these vaginal excitor nerves are in relation both with the lower medulla and the medulla oblongata.

"By the lower medulla, and the excitor and motor nerves in relation with it, reflex actions of the uterus are produced by the excitation of these nerves; while all the reflex actions of the respiratory system depend upon the medulla oblongata. If the spinal marrow were divided in the medulla there could be no respiratory action in parturition."

By respiratory action the author means the fixing of the chest and the suspension of the breath, ending in a forcible expiration. The excitor nerves involved in this stage are the ovarian, uterine, and vaginal; and the motor are the uterine nerves and the motor nerves of the respiratory muscles.

"When the fœtal head is actually passing the ostium vaginæ a new set of actions make their appearance. The perinæum, after being distended to the utmost, is now retracted over the head by the action of the levatores ani; the sphincter ani and sphincter

vesicæ dilate suddenly; the vagina contracts upon the advancing mass, and the head glides rapidly into the world. The dilatation of the two sphincters, between which the vagina is placed, compensates admirably for the absence of a perfect sphincteric muscle at the outlet of the parturient canal. The effect of this double dilatation is, that at the precise moment when there is the most imminent danger of laceration, there is a sudden and considerable removal of tension from the parts endangered. The dilatation of the sphincters is partly dependent on the sensation and emotion of severe pain, and partly on the reflex dilatation peculiar to the sphincteric muscles." "The excitor nerves involved in the stage of expulsion are, the ovarian nerves, the uterine nerves, the vaginal nerves, and the nerves of the ostium vaginæ. The upper and lower divisions of the spinal centre are implicated as in the stage of propulsion. The motor nerves excited to action are, the uterine, vaginal, and respiratory nerves, and the nerves of the sphincter ani and sphincter vesicæ."—pp. 163–4.

The subsequent contraction of the uterus is insured by the irritation of the placenta, which, in its expulsion, calls into play the motor nerves of the uterus, vagina, and ostium; and, subsequently, the mammary irritation produces a reflex action of the uterus.

We have thus laid before our readers a brief account of this dynamic physiology of the uterus, omitting the phenomena with which all practitioners are acquainted, and confining ourselves to those developed by the reflex actions. We have of course been obliged to pass over many admirable and practical illustrations of this action, in order to insure something like a connected view of the four great phenomena of the generative functions.

The practical value of the views Dr. Smith has so ably laid before us will be shown by quoting the two great classes of motor derangements or deviations from normal labour. *Class* I. includes—1, abortion; 2, precipitate labour; 3, rigidity of the os uteri; 4, rupture of the os uteri; 5, laceration of the perinæum; 6, excessive after-pains; 7, encysted placenta; 8, inversion of the uterus; 9, hour-glass contraction; 10, metastatic pains; 11, puerperal convulsions. *Class* II.—1, uterine inertia; 2, tardy labour; 3, sinking; 4, uterine hemorrhage; 5, placenta prævia; 6, retained placenta; 7, labour with paralysis.

The first class of deviations includes those which are caused by excessive, and the second, those which arise from deficient motor action.

We trust that our readers will now understand the mode in which the author employs Dr. Marshall Hall's brilliant disco-

veries to explain the causes of ovario-uterine action, and the completion of the generative and parturient functions. We should have been glad to have entered more fully into his examination of some of the instances of deranged motor action, but we must content ourselves with specifying the chapters on abortion, rupture of the uterus, inversion, and puerperal convulsions, as being rich in information of practical value.

The work may be regarded by superficial readers as one of theory, and so it is; but we are not of those who would discard every contribution, however true, that is not solely practical. Truth must, in its nature, be practical, and a theory that is true will not be long before it embodies itself in a practical form. We believe that the dynamic physiology so ably put forward in this volume is true, though not the whole truth; and we feel sure that no one can carefully study it without becoming a more intelligent and practical obstetrician. For our own part, we regard this work as the ablest system of ovario-uterine physiology that has appeared since the time of William Hunter. It is rare, even in these times, to find such an accumulation of facts, such careful induction, and such satisfactory conclusions, with so much light thrown upon ordinary but obscure processes.

The volume is well written, clear, intelligible, and exhibits throughout great powers of observation and analysis. The publisher's name is a sufficient evidence that it is well brought out. In conclusion, we strongly recommend the thoughtful study of the volume to all careful, practitioners; we are sure that they will derive as much pleasure from it as ourselves, and rise from its perusal with gratitude to the author through whose exertions they have obtained a clearer insight into the wonderful arrangements by which the multitude of effects are shown to result from such unity and simplicity of casual actions.

Since the foregoing observations were written, Dr. Tyler Smith has forwarded to us a tract "Upon a New Method of treating Sterility," as a supplement to his larger work. The cases of sterility to which he alludes are those arising from obstructions of the Fallopian tubes owing to profuse or thickened secretion, and this he proposes to remedy by the passage of a fine whalebone probe into the tube. To do this, however, is no easy matter, and Dr. Smith has applied all his ingenuity to the construction of a suitable instrument, which consists of a hollow tube or catheter, resembling Professor Simpson's uterine sound, with the addition of a short lateral curve at the

point, turning to the right or left according as it is for the right or left Fallopian tube. This catheter is to be passed through the cervix to the top of the uterine cavity, and then the orifice of its curved extremity will, Dr. Smith says, correspond as nearly as possible with the orifice of the Fallopian tube. Having so far succeeded, a very fine whalebone probe is to be passed through the catheter into the Fallopian tube, the distance to be ascertained by marks upon the outer extremity of the probe. Dr. Smith states that there is no difficulty in passing the probe, although the introduction of the catheter is not always easy; and after several trials he has never seen any inconvenience result from the operation.

We have not tried this operation, and therefore can give no opinion from experience, but there are one or two remarks we may venture to make.

1. As we formerly observed, when speaking of the uterine sound, and other mechanical inventions of the same kind, we have not found the uterus so insensible as some have represented it, and we have known such explorations to be followed by pain, irritation, and inflammation.

2. Mechanical sterility, like mechanical dysmenorrhœa, we believe to be comparatively a very rare occurrence, and we have no means of diagnosing it.

3. To subject the uterus to this operation in cases of sterility, on the chance of the cause being mechanical, would be running an amount of risk which, we think, might prove seriously disproportionate to the intended good.

4. We should fear that the operation will not be quite so easy or certain as Dr. Smith supposes, if the obstruction be firm and the probe very fine; and, on the other hand, if a stronger probe be used, there may be danger of actual injury.

5. Dr. Tyler Smith states that as yet he has seen no unpleasant effects from this exploration, and we believe him as a man of truth; but so others say of the free use of the uterine sound, &c., and yet we have known great irritation excited by it. We should, therefore, prefer to have a more extended experience of it before pronouncing in favour of such an operation. The state of the womb, for some time after the operation, should be carefully watched, and the results noted; then we may be able to decide whether it be admissible, and in what cases.

A Practical Treatise on Inflammation of the Uterus and its Appendages, and on Ulceration and Induration of the Neck of the Uterus. By JAMES HENRY BENNET, M. D., &c. London, Churchill. 1849. Second Edition, pp. 527.

DR. BENNET is now too well known as a zealous and successful writer on uterine diseases, to need any recommendatory comment in introducing his work to the notice of our readers. The fact of a second edition having been called for is sufficient proof of the estimation in which he is held as an author, and confirms us in the favourable opinion we expressed of the former edition of his Treatise(*a*). A vast deal of important matter has been added, and the size of the volume is thereby so much augmented, that, although nominally a second edition, it is in reality a new work. We cannot better convey an idea of the character of this truly classical Treatise than by giving a short analysis of its contents.

After some preliminary matter, in which will be found an excellent account of the anatomy and physiology of the uterus, the Author proceeds to describe inflammation of the womb in the non-puerperal state, under the heads of *Acute Metritis*, *Chronic Metritis*, and *Internal Metritis*. The observations on each of these subjects are very good, and possess much originality, particularly those upon internal metritis,—an affection which seems to have been hitherto confounded with inflammatory disease of the cervical cavity, but from which it differs in many respects. Inflammation and abscess of the uterine appendages, both in the puerperal and non-puerperal states, next come under consideration. The latter form has not been described by any preceding author, and yet Dr. Bennet says he is enabled "to state most positively, from his own experience, that the disease is by no means uncommon, although generally unrecognised, and confounded with acute metritis or iliac abscess."—p. 56.

The more common lesions of inflammation, ulceration, and hypertrophy of the neck of the womb, occupy the six succeeding chapters ; and their pathology, symptoms, and diagnosis are elucidated in the most minute and satisfactory manner. He first gives a general description of inflammation, acute and chronic, in this region, and then devotes separate chapters to the consideration of the peculiarities which the disease presents, first, in *virgins ;* secondly, in *pregnant women ;* thirdly, in the

(*a*) Vol. i. of our present Series.

puerperal state ; and, fourthly, in *women who have ceased to menstruate.* Each of these chapters may be consulted with profit and deep interest by all engaged in the treatment of female diseases ; and though it would be impossible to expect that mere extracts could give any adequate notion of the amount of practical information contained in them, we cannot forbear making a few quotations. Of inflammation and ulceration during pregnancy, our author remarks:

"I have devoted great attention to the elucidation of inflammatory ulceration of the cervix during pregnancy, and have ascertained that it is of frequent occurrence, that it is the key-stone to the diseases of the pregnant state, and the most general cause of laborious pregnancy, obstinate sickness, moles, abortions, miscarriages, and hemorrhage."—p. 192.

This passage is quoted, as it exhibits Dr. Bennet's views respecting the wide extent of evil resulting from inflammatory action in the cervix uteri, in connexion with the gravid estate. Let it not be supposed, however, that we fully acquiesce in the above statement; on the contrary, we are of opinion that the doctrine it affirms should not be received without some limitations. When inflammatory induration is present at the time of labour, Dr. Bennet thinks it very much retards the dilatation of the os uteri, and that the patient may even be exposed to very great risk of rupture of the womb should she be near the full term; and he further expresses his conviction that many of the recorded cases of this frightful accident occurred under these circumstances. Time and patience, however, usually prove adequate for the removal of this cause of delay. The most prominent of all the symptoms resulting from inflammatory ulceration of the cervix, during the puerperal state, and after abortion, is *hemorrhage.* This ordinarily shows itself under the appearance of excessive lochial discharge, the blood thus excreted being pure or mixed with muco-purulent matter.

"I have no hesitation in saying, that when hemorrhage continues after parturition for weeks beyond the usual time, there will *nearly always* be found some inflammatory and ulcerative lesion of the cervix, and that an instrumental examination is indispensable. Once the real nature of the disease is ascertained, the hemorrhage may, generally speaking, be immediately stopped by the cauterization of the ulcerated surface, from which it seems in these cases principally to proceed."—p. 227.

In the tenth chapter we have some remarks on the inflammation and ulceration of the neck of the womb, which accompa-

nies uterine polypi and fibrous tumours. Dr. Montgomery's observations on this subject (recorded in the second volume of our Journal) are alluded to, and their accuracy confirmed, by Dr. Bennet. The subject of retroversion of the fundus, and of the neck of the unimpregnated uterus, has latterly engaged a good deal of the attention of accoucheurs, and been the source of much controversy amongst them. According to Dr. Bennet's experience, "displacements of the uterus and of its neck, *in whatever direction they occur*, when slight, and when they have taken place gradually, do not occasion any symptoms whatever, if there is no inflammation present."—p. 296. He takes considerable pains to prove that the symptoms ordinarily attributed to retroversion are, in reality, dependent on the concomitant inflammation, and that, when this is thoroughly cured, all the morbid symptoms disappear without any therapeutic means having been directed to the displacement. Now, if this be found correct (as we are much inclined to think it will), it is needless to say that it must effect a complete revolution in some of the prevailing modes of treating versions of the uterus.

Three chapters are allotted to inflammation of the vagina and vulva, syphilitic ulcerations of the uterine neck, and to the diagnosis of cancer of the womb. The last of these subjects he investigates at great length, his remarks extending over forty-three pages; and considering that he has here to contend with some of the first uterine pathologists of the present day, we must confess that he handles the question with much ability, and displays throughout great powers of observation and closeness of reasoning. The grand point he labours to establish is best conveyed in his own language:

"I firmly believe that the forms of disease which they (Clarke, Ashwell, &c.) have described as the first stage of uterine cancer are merely and solely modifications of inflammatory action in the neck and mouth of the uterus, totally distinct from cancerous growths, and having little, if any, tendency to malignant degeneration. I also believe that the cases brought forward to illustrate the physical diagnosis and the curability of cancer are simple instances of inflammation."—p. 349.

He submits to a most searching analysis the writings and cases of Sir C. M. Clarke, Ashwell, Montgomery, and Lisfranc, with a view to show that the condition of the cervix uteri described by these authors as cancer in its incipient or *curable stage*, is only an advanced stage of chronic inflammation and induration, having no disposition to "cancerous degenerescence." We decline offering any comment on the soundness of the opinions here put forward,—time alone must decide that;

but we cannot refrain from expressing our warm admiration of the clear, logical manner in which they are stated.

It yet remains for us to notice two most valuable chapters, the twelfth and fifteenth. The former is on the connexion between inflammation of the uterus, or its neck, and functional derangements and displacements of the uterus; and the latter comprises the treatment of the several inflammatory affections, the description and history of which form the special object of the Treatise. Each of these will be found to contain much sound and original information. From the latter we transcribe two passages, which, it is hoped, may have their due weight with the "heroic" obstetricians of the present day. Speaking of the use of injections of nitrate of silver into the uterine cavity, for the cure of internal metritis, he says:

"There is reason to believe that uterine injections are not safe, and I consequently never resort to them. Several deaths occurred in Paris, during my residence there, from metro-peritonitis, brought on by their use."—p. 485.

"The cavity of the uterus bears surgical interference, as we have seen, less than any other uterine region; its cauterization being nearly always attended with extreme pain, nausea, or even sickness, copious hemorrhage, and considerable febrile reaction."—p. 486.

In the form of an appendix he subjoins some very judicious and useful observations upon the physical examination of the uterus and its appendages. Besides the numerous cases scattered throughout the volume, there is annexed a synopsis of 300 cases, presenting uterine symptoms, treated at the Western General Dispensary; and under the headings of "Age," "Menstruation," "Social State," "Disease," and "Prominent Symptoms," we have before us the leading features of each individual case.

Having now concluded our sketch of the contents of this truly excellent Treatise, it only remains for us to express our deep admiration for the talents of its author, and our sense of obligation for the great benefit he has conferred on this department of practical medicine. We feel convinced that if the first edition of this work was worthy of a favourable reception by the profession, the second is, in every respect, infinitely more so.

Observations on the Pathology of Croup; with Remarks on its Treatment by Topical Medications. By HORACE GREEN, A. M., M. D., &c. New York and London, Wiley. 1849. 8vo. pp. 115.

On Infantile Laryngismus; with Observations on Artificial Feeding, as a frequent Cause of this Complaint, and of other Convulsive Diseases of Infants. By JAMES REID, M. D., &c. London, Churchill. 1849. 8vo. pp. 204.

IN the fourth volume of our new series we gave a rather lengthened review of a treatise by Dr. Horace Green, on "The Diseases of the Air Passages," in which the most prominent feature of interest was his original method of applying a caustic solution to the interior of the larynx. In the present instance, Dr. Green has produced a volume, which may very fairly be called a Treatise on Croup, but at the same time it would appear, that the main object in its publication is to bring under the notice of the profession his plan of treating this disease, by the topical application of solution of nitrate of silver to the tracheo-laryngeal mucous membrane. He first gives a good account of the affection, and quotes the opinions of the latest and best authorities upon its pathology; as nothing very novel, however, is put forward in this part of the work, we shall confine our attention chiefly to the new practice which he recommends, and, by so doing, hope to fulfil the main objects to be aimed at in a review, namely, to do justice tot he author, and to consult the interest of the reader.

Of the conclusions to which Dr. Green has come respecting the nature of croup, we quote the two following—his second and fourth,—as they have some bearing upon the question of topical medication.

"Its distinctive and essential characteristics consist in an inflammation of the secreting surfaces of the fauces, larynx, and trachea, which is always productive of a membranaceous or an albuminous exudation."

"The exudative inflammation commences invariably in the superior portion of the respiratory passages, and extends from above downwards,—never in the opposite direction."—p. 4.

There are few men of any experience who will entirely acquiesce in the former of these propositions; for it does not admit of question but that fatal cases of croup do occasionally occur, in which no false membrane is discoverable before or after

death. Dr. Ware, of Boston, is quoted by our author, as making an observation to this effect. On the other hand, there will scarcely be found any one to deny that the most remarkable pathological character of the complaint is the *tendency* to membranaceous deposition. Dr. Green's fourth position is laid down in the same positive terms, and, like the former, its accuracy will not bear a close scrutiny, although as a general rule it may hold good. It really surprises and grieves us to see a man of talent and observation, as Dr. Green undoubtedly appears to be, thus drawing such unconditional and sweeping conclusions. That croup, in the majority of instances, commences above (though not so high as the fauces), and propagates itself downwards, is an opinion supported by the highest authority; but that it occasionally pursues an opposite direction we are also bound to believe, on the testimony of Stokes, Copland, Porter, and other observers.

In the topical treatment of croup, Dr. Green has always employed a solution of the crystals of nitrate of silver, varying in strength from two to four scruples of the salt to an ounce of distilled water. The instrument for applying this is the same as that described in his former work, and is composed of a slender piece of whalebone, about ten inches long, slightly curved at one end, to which curved extremity is securely attached a small round piece of soft sponge, whose diameter should not exceed half an inch.

"The instrument being prepared, by suitably saturating the sponge with the solution to be applied, and the head of the child being firmly held by an assistant, and the base of the tongue depressed with a spoon, or any other suitable instrument, the operator carries the wet sponge quickly over the top of the epiglottis, and on the laryngeal face of this cartilage; then, pressing it suddenly downwards and forwards, passes it through the opening of the glottis into the laryngeal cavity."—p. 83.

The first objection that naturally presents itself to this practice, is the risk of its inducing spasmodic closure of the glottis. Let Dr. Green, however, speak on this head:

"Ordinarily, I have applied in croup, a solution composed of from two scruples to a drachm of the salt, dissolved in one ounce of distilled water. A remedy of this strength I have freely applied to the fauces, pharynx, and into the larynx of young children, in a large number of cases during the last eight years, and in no single instance have I observed any indications of the dangers of suffocation from its employment. On the contrary, I have repeatedly observed, and have once before remarked, that much less bronchial irritation is produced by the application of the nitrate of silver into the la-

rynges of young children who are suffering from croup, than when it is introduced into those of adults who are affected by chronic disease of the larynx."—p. 81.

There is no stage, whether of simple or complicated membranous croup, in which Dr. Green does not think that this plan of treatment, in combination with appropriate general remedies, is salutary. Several cases are detailed in illustration of the practice, and the remarks upon the general treatment of the disease are sound and judicious. On the whole we cannot but consider that Dr. Green is deserving of much praise for the ingenuity and zeal he has displayed in bringing to light this new remedy; and though we are not sanguine as to its utility in all stages and forms of croup, still we by no means wish to disparage or prejudge its efficacy. Had his investigations gone no further than to prove that a foreign body may, under certain limitations, be safely carried within the rima glottidis, he would have added to our physiological knowledge a fact of such great practical importance, that no one could venture to predict how far it may yet influence the treatment of laryngeal diseases.

We now turn to Dr. James Reid's work "On Infantile Laryngismus," and, after a careful perusal of its contents, hesitate not to say that it is an admirable systematic treatise upon the disease, and manifests throughout the sound practitioner and enlightened physician. His views respecting the primary or remote cause of the disease, so long a *questio vexata* amongst authors, are capacious and unbiassed. Instead of looking at the subject through a partial medium, and seeking to establish some one special cause (as most writers have hitherto done), he clearly shows that spasm of the glottis may arise from a variety of causes, of which the most frequent are, intestinal irritation, the result of an improper description of food, and impure air. Under the several heads of "History," "Symptoms," "Causes," "Diagnosis," "Treatment," &c. &c., every point of any interest, relating to this singular complaint, receives its full share of consideration, and controverted questions are discussed with calmness and judgment. His opinion as to its nature and cause is briefly expressed as follows:

"1. That, for the occurrence of this complaint, the cerebro-spinal system is required to be in a peculiarly excitable state, which thus acts as a *predisposing* cause. The period of teething is the most likely one to produce this condition.

"2. That during this irritable state of the nervous centres, the two most frequent (and in the majority of instances, the combined) causes are '*the improper description of food*' which is administered

to the infant, and 'the *impure and irritating* atmosphere' which it breathes."—p. 71.

Without actually denying the possibility of laryngismus depending on a cerebral cause (so much insisted on by some authors), he yet brings forward a large body of evidence to show that it very rarely proceeds from this source, and in this we quite agree with him. Many writers and practitioners still hold to the opinion of enlargement of the thymus gland being a common cause of the complaint; but Dr. Reid thinks that the arguments against Dr. H. Ley's theory will equally apply to this. The following extract we give as bearing upon this point, and also because it affords a fair specimen of our author's style, which is remarkably clear and intelligible:

"It would not be unreasonable to expect that such enlargement of the gland (thymus), and its consequent continued pressure against the trachea, would cause much more permanent effects than are visible in this complaint; and accordingly, in the cases quoted by Dr. Montgomery, from Lieutaud, of enlarged thymus in the adult, and in one seen by himself, it appears that the symptoms were in reality such as we might anticipate,—viz., pain in the chest, troublesome cough, *continued dyspnœa*, and difficulty of lying on one side, all showing the effect of continual pressure, but which are not the symptoms observed in infantile laryngismus. May not the hypertrophy of the thymus gland, when seen after a fatal termination of the disease, depend more upon the frequent straining during the attacks acting so strongly on these parts?"—p. 58.

In most of the cases related by the supporters of this theory, Dr. Reid shows that there exists evidence of alvine derangement having been present, and of an injudicious mode of feeding having been pursued. The evil effects of "rearing by hand," on infantile health generally, are described at some length, and abundantly illustrated by references to the statistics of several public institutions. This section, as well as that "on the diet of infants predisposed to convulsive affections," is truly excellent, and the principles laid down are based on extensive observation and sound physiology.

The plan of treatment recommended by our author is such as naturally follows from his views of the nature and causes of the complaint. No empirical or routine system is advocated; on the contrary, in each individual case, the sources of irritation must be diligently sought out, and, if possible, removed. Medicines of the purgative and antispasmodic classes are those upon which he seems to place most confidence; along with these, change of air is very desirable. The abstraction of blood he thinks is rarely beneficial or necessary, and in the

simple form of the disease, which he regards as dependent solely on irritability, is never resorted to by him. But for full information on this subject we must refer to the work itself, in which all the remedies for laryngismus are enumerated, and separately commented upon. It is with reluctance we take leave of this volume, but we can so confidently recommend it to the notice of our professional brethren, and its price renders it so accessible to all, that we deem it unnecessary to make any apology for the shortness of this review.

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1. *Portraits of Diseases of the Skin.* By Erasmus Wilson, F. R. S. London, Churchill, 1848–49. Folio. Fasciculi I. to V.

2. *Leçons sur les Maladies de la Peau; professées a l'Ecole de Médecine de Paris en* 1841, 1842, 1843, 1844. Par P. L. Alphee Cazenave, Médecin de l'Hopital Saint Louis, &c. Paris, Labé, 1845–49. Folio. Livraisons I. to VI.

3. *Bibliothèque de Médecin-Praticien.* Par une Societie de Médecine, sous la Direction du Docteur Fabre. Tome 8me. Traité des Maladies de la Peau et ses Appendices. Paris, Bailliere, 1848. 8vo. pp. 659.

4. *Eruptions of the Face, Head, and Hands, with the latest Improvements in Treatment of Diseases of the Skin.* Illustrated with coloured Plates. By J. H. Burgess, M. D. London, Renshaw, 1849. pp. 254.

5. *Portraits of the Diseases of the Scalp, with the safest and most efficient Modes of Treatment.* By Walter Cooper Dendy, Senior Surgeon to the Royal Infirmary for Children, &c. London, Highley. 1849. Royal 4to. Number 1. Four coloured Drawings.

Superficially measured, the most extensive structure of the human body, and endowed with a function one of the most important to a due preservation of health, the skin in its diseased states has at all times much engaged the interest of the physician; and we consequently find that, from the earliest ages of medicine, it has afforded a frequent theme for medical writers. Eruptive diseases of the skin are, however, so numerous, many of them bear such a close resemblance to each other, and present such varied aspects in their different stages, that mere verbal description has failed to afford sufficiently distinctive characters to render their diagnosis facile. Yet it is

singular that the attempt to elucidate this difficult subject by the aid of pictorial illustrations should not have been made previously to the commencement of the present century, and it is still more singular that the first illustrated work on cutaneous diseases,—that of Willan,—incomplete as it is, should remain almost without a rival, so far as regards truthfulness and accuracy of representation, to the present time.

There is no one circumstance, we are certain, which has tended more to increase the obscurity which even still enve lopes this class of affections, and to render their diagnosis more difficult to the physician unpractised in their observation, than the overcolouring and bad drawing which have been so universal in the many illustrated works on cutaneous diseases that have been published since the days of Willan; and the same defects occur even in some of those most recently issued from the Press, both at home and abroad. Another, and a very fertile source of difficulty in their study, has arisen from the confusion, both as regards classification and nomenclature, which has been not alone perpetuated but increased by each succeeding writer on the subject, with scarcely a single exception: author after author seems to have aimed rather at theoretical novelty than at practical truth.

Much of this must be ascribed to the publication of Alibert's magnificently illustrated treatise so immediately after that of Willan, and before the proposed arrangement of the latter had time to be sufficiently appreciated by the profession. Since then the many systems of classification put forward have been more or less based on that of either of these two celebrated men; but of one alone can we say that it has tended to elucidate or simplify the subject. The exception we make is that by Cazenave, contained in his splendid work, the title of which we have prefixed to this notice. A short outline of his arrangement will, we have no doubt, prove acceptable to our readers.

Cazenave fully recognises the great aid to diagnosis which a nomenclature derived from the exact form and character of the eruption gives, and therefore retains the names of Willan; but he adopts a classification calculated to afford correct views of the pathology and therapeutics of cutaneous diseases, and therefore based on their natural affinities. It is composed of eight groups; the first is entitled *Inflammations*, and is divided into four genera:—1. *Non-specific eruptions, capable of existing in either an acute or chronic form*, which includes erythema, erysipelas, urticaria, strophulus, herpes, eczema, pemphigus, impetigo, ecthyma, sycosis. 2. *Non-specific eruptions, existing always in a chronic form*, which includes rupia, lepra,

psoriasis, pityriasis, pellagra. 3. *Acute specific Eruptions:* roseola, rubeola, scarlatina, variola, vaccinia, varicella, miliaria. 4. *Chronic specific eruptions:* syphilides.

The second group is entitled, *Lesions of Secretion;* it consists of three genera:—1. *Lesions of follicular secretion:* acne, porrigo favosa. 2. *Lesions of epidermic secretion:* ichthyosis, horny productions. 3. *Lesions of secretion of the colouring matter*, which is subdivided into decolorations,—albinismus, vitiligo; and changes of colour,—bronzed tint, ephelidis, pigmentary nævi.

The third group is entitled *Hypertrophic Affections*—abnormal development of the parts diseased; in it are placed elephantiasis Arabum, molluscum, frambœsia, veruca, vascular nævi.

The fourth group is termed *Degenerations*—diseases which have a tendency to destroy the parts affected; it includes elephantiasis Græcorum, Aleppo tubercle, keloides, lupus, cancer.

The fifth group is named *Hemorrhagic Diseases*—affections characterized by the presence of blood, more or less altered, outside the vessels which ought to contain it (hemorrhage of the skin properly so called): purpura, melanosis.

The sixth group consists of *Lesions of the Sensibility of the Skin*—divided into, 1, hyperæsthesia, local or general, including lichen, prurigo; and, 2, anæsthesia.

The seventh group is termed *Foreign Bodies;* it contains, acarus (scabies), pediculus, pulex.

The eighth group, termed *Diseases of the Appendages of the Skin*, is divided into: 1. diseases of the hair—alopecia, canitia, plica; and 2. diseases of the nails—onyxia.

In putting forward this classification, which we commend chiefly for its simplicity, and the connexion retained throughout between pathology and therapeutics, the author modestly states, that it is not to be regarded as definitive or complete, but merely as an "attempt;" to receive modifications from experience and time, and thus be rendered eventually perfect.

Another method of arranging skin diseases, with a view to their description, has been adopted by many writers, with but few modifications since it was first proposed by Celsus in the twenty-eighth chapter of his fifth book; in it they are described with reference to the special part of the surface on which they appear. This plan of classification is by most authors incorrectly stated to have originated with Mercurialis, a physician of the sixteenth century, who published an excellent work on the subject. Its very great practical advantage is apparent to every one of the least experience, for we know how these affections differ in appearance as they occur on those parts of the skin

covered with hair, on parts usually protected from the air by clothing, and on surfaces always exposed. This is especially evident in eruptions which occur on the hairy scalp, and we consequently find that it has been adopted by many writers of modern days, amongst whom we may enumerate Mr. Erichsen, Mr. Wilson, Dr. Neligan(*a*), and the two authors, Dr. Burgess and Mr. Dendy, whose works are noticed in this review.

(*a*) As Dr. Neligan's Essay on Diseases of the Scalp appeared originally in our pages, from which it was reprinted and published in a separate form, we feel that we are in justice bound to insert the subjoined communication, which he has forwarded to us, in reply to a review published in the British and Foreign Medico-Chirurgical Review for April last.—Ed.

"Sir,—I mean to trespass but very shortly on your space, or on the patience of your readers, on a matter which, did I deem it personal to myself alone, I should not notice, but as I believe it to affect the honesty of purpose and professional feeling by which a medical reviewer ought to be actuated, I cannot pass it by altogether in silence.

"In the Number of the British and Foreign Medico-Chirurgical Review, for April last, my short Essay on Eruptive Diseases of the Scalp, which was inserted in the pages of your Journal, is noticed in a flippant review, consisting, as I hope to be able to prove to you, of a tissue of misstatement and misrepresentation, clothed in the common-place language and vulgar style of a writer attempting, but lacking the power, to be fine and caustic. As it is, however, neither my aim nor my ambition to imitate him, I shall at once proceed to 'the proofs.'

"The reviewer, exhibiting in the very first paragraph his peculiar style, starts with the observation that 'Dr. Neligan has made a *false* statement when he asserts that herpes capitis is the true ring-worm of the scalp!' 'Herpes is not ring-worm, nor is it an idiopathic disease of the scalp in any shape or form. That herpetic vesicles are to be seen on the forehead and temples, sometimes extending from the cheek in the form of herpes circinnatus, is quite true, but they never extend beyond the margin of the hair!' Now here the reviewer betrays at one and the same time his limited knowledge of medical writings, and his want of practical experience. Herpes circinnatus, when it appears on the face or body, is, to use his own elegant phraseology, known to 'every hospital nurse, nay, every old wife in the kingdom,' as ring-worm, and as being contagious; though in a subsequent paragraph the reviewer states that 'it has never yet been shown that any vesicular eruption occurring on the human skin is contagious.'

"The disease which I have described is this form of herpes occurring on the scalp, but presenting certain peculiarities, as most other eruptions of the skin do when they have their seat there. I have two sets of cases at present under my care which are strongly illustrative of the truth of my position. In three children of one family, whom I have seen with Dr. M'Cready, the disease, as he can bear testimony, agrees precisely with the characters I have laid down, and has appeared on the scalp alone; but the children's mother, who attended to their treatment herself, 'took the disease from them' (I use her own words), and got ring-worm,—herpes circinnatus,—on the backs of her hands. The second instance, Mr. Finucane has seen with me: four children of the same family are affected; the disease in the two elder is present on the face, body, arms, and scalp; in the two younger on the scalp only: in the former some of the rings run directly from the face and back of the neck up into the scalp, where they alter in character, and are precisely similar to the eruption seen in the younger children, and in the

Having premised so far on the classification of diseases of the skin, we shall now proceed to our immediate object, the bringing before our readers some of the more recent publications on these difficult and little understood affections, and endeavouring to give a just estimate of their value.

Of Mr. Wilson's ambitious undertaking, five parts, each

first cases I have referred to. Here too the mother contracted the disease on the backs of her hands; and three of the children were stated to me to have taken it from the fourth, who returned affected with it from a school where the eruption prevailed among the boys. I may add that Bictt and Alibert have both described a contagious form of herpes.

" ' No form of herpes,' says the reviewer, ' ever terminates in a true scale, but rather in a kind of film.' Now what says M. Cazenave, probably the most distinguished dermatologist of the present day, in his magnificent folio work at present in course of publication. At page 46, when describing the different varieties of this eruption, he says of one: ' Cette variété de marche, plus fréquente peut être qu'on ne le croit, a une valeur réelle; elle suffit pour constituer une espèce à part que j'ai appelée *herpès squameux !*'

" In the fourth paragraph the reviewer exhibits an obtuseness always inclined to cavil at trifles. He writes: ' At page 15, Dr. Neligan says that impetigo is the only pustular disease which is met with on the scalp, a statement equally erroneous,' &c. The simplest capacity can here understand that I refer only to those affections peculiar to the scalp, for in the introduction I state that I exclude from my arrangement psoriasis, lepra, and ecthyma, as being very rarely met with there, unless in connexion with their existence on the skin generally.

" My division of diseases of the scalp into inflammatory and non-inflammatory is a grave offence; I should, forsooth, have pleased the reviewer by dividing them into acute and chronic. It is much to be regretted that a member of the *corps de revue* should be so ignorant as not to know that both inflammatory and non-inflammatory diseases have their acute and chronic stages.

" The next three paragraphs require but a single comment, they are excellent examples of praise grudgingly bestowed in the form of a short analysis of my views. The observation I purpose to comment upon is the following: ' The author need not go farther than his own *excellent* work on the Uses of Medicines.' When the first edition of my work on medicines was published it was most favourably reviewed in all the British medical journals with but two exceptions,—the defunct quarterlies, the predecessors of the present British and Foreign,—in both of which it was, as time has proved, most unfairly condemned; but now, when the reviewer's opinion can no longer injure it, their successor, with a show of liberality, terms it an ' excellent work on medicines.'

" I now come to notice the last portion of this review, in which my observations on porrigo capitis are commented on. I am first found fault with because I state my belief in the vegetable nature of the growth on the scalp, following in the wake of observers, both continental and British, much more worthy of credit than the anonymous scribe in the British and Foreign Review, and satisfying myself of the correctness of their views by personal examination of the diseased product in *two* instances. I might certainly have examined it in a greater number of cases, although the disease is not common; but I think the profession will agree with me that, as I was merely verifying what was previously noticed, and not engaged in a new discovery, I took sufficient pains before I was ' convinced.'

" The reviewer next displays his ignorance of logic in an attempt to

containing four plates, have been published; the object of the author is, as he himself remarks, well represented by the title he has chosen. Bound down to no classification or pre-arranged plan, he is enabled to select the most characteristic and best example of each particular disease, which he would be unable to do were he compelled to follow any regular sequence in the

parade his knowledge of it, and at the same time be witty at an author's expense; his observations are too futile to require exposure, I would merely remind him that there are two premises in a logical corollary, and that of these the *minor* is very commonly suppressed, as I have done. His not knowing this fact, and his acquaintance with "Bob (not *Bob's*) Logic," is a sufficient proof in what school he has himself studied.

"The last paragraph but one contains two charges: first, that I am guilty of 'empiricism, and irrational empiricism too;' and second, that I claim to have been the first to use an ointment 'composed of' (I suppose he meant 'containing') 'iodide of lead, in the treatment of porrigo capitis, M. Hebra of Vienna having employed it for years.' The first charge is easily disposed of. My *quackery*, according to the reviewer, consists in the recommendation of a *local* remedy to destroy the vegetable growth on the scalp, *at the same time* that I advise the administration *internally* of medicine which will act constitutionally, so as to prevent its reproduction. The reviewer's 'rational treatment'—I quote his own words—'would be, to endeavour to remove the vicious state of constitution, by which the seeds of the disease were generated, *before* having recourse to any *local* measures, other than those of cleanliness.' I leave the profession to decide which of the two proposals would be likely to prove most beneficial; and from the grounds on which a charge of 'irrational empiricism' is made against a brother practitioner, to judge of the truth and impartiality of the British and Foreign Review. As to the second charge, I will not say that it is false, although I believe it to be so. I was not aware that Hebra, or any other physician, had employed this preparation as I have done in porrigo until I saw it stated here. His use of it is not mentioned in any of the British, French, German, or American works on materia medica that I have had access to, amounting to no small number; and I have been unable to procure any work of Hebra's on skin diseases through the London or Dublin booksellers. But as I was aware that my friend, Dr. Alexander Fleming, of Edinburgh, had attended the clinique and lectures of Hebra in 1847, and my first published case occurred in 1846, I wrote to him on the subject, and from his reply I quote as follows: 'In my notes of Hebra's lectures, which are tolerably full, I find no mention whatever of the employment of iodide of lead in skin diseases, nor do I recollect ever seeing it employed in his wards, which contained, during my attendance, many specimens of diseases of the scalp.' So much for the reviewer's last charge.

"And here, Sir, I must conclude, as I do not wish to trespass too much on your pages. My object has been to set myself right with the profession, and at the same time to exhibit the *anti-Irish* character of the British and Foreign Medico-Chirurgical Review, especially under its present management. To judge, indeed, from this April Number, in which four works by Dublin physicians are disparagingly reviewed, we must suspect that it has adopted as its motto a not uncommon conclusion of advertisements in the *Times*, 'No Irish need apply.'

"I have the honour to be, Sir,

"Your obedient servant,

"J. Moore Neligan.

"*Dublin, July* 2, 1849."

production of his illustrations. And by the artist the advantages are obtained of "transferring his drawing immediately to the stone, and of being enabled to complete his colouring of the lithograph from the patient, and while all the peculiar tints of the disease are fresh in his mind." The letter-press consists of a report of the case of the patient from whom the illustration is obtained, "with such general deductions and practical observations introduced among the details of the case, as may tend to explain more fully the history and management of the disease."

In the first fasciculus we have an illustration of chloasma or liver-spot, a most faithful representation of a not uncommon alteration in colour of the skin, which is often mistaken for pityriasis; but our experience differs from that of Mr. Wilson in the relative frequency of the two, for we have seen the latter very much oftener than the former. Two illustrations of favus, or honeycomb ringworm, representing different stages of the disease in the same individual, are given; excellent drawings, and unmistakeable portraits of the disease, but not in so inveterate a form as we sometimes meet with it in Ireland. We regret that in the letter-press description of the case the author has not even adverted to the vegetable theory of this eruption; we know that his disbelief in this doctrine is quite decided; but although he may not himself have been able to recognise a fact stamped with the authority of some of the most experienced and celebrated microscopical discoverers of the age, he might at least have given his readers the option of judging for themselves, by referring to the results they have arrived at. The fourth plate is a good portrait of psoriasis palmaris, though certainly not, to our eye, nearly so faithful as that contained in Willan's quarto volume.

The first and second plates of the second fasciculus present admirable illustrations of lupus exedens serpiginosus in the stages of ulceration and of cicatrization. The third is truly a portrait of lichen agrius dorsi manus, a disease very frequently mistaken for, and described as, a form of psoriasis, eczema, or impetigo, yet so commonly known to all by the vulgar names of baker's, grocer's, or washerwoman's itch. The fourth plate represents two forms of disordered chromatogenous function, melanopathia and leucopathia. We have been recently asked to prescribe for a case bearing the closest resemblance to the one here described by Mr. Wilson.

The third fasciculus contains a plate of acne vulgaris, not the happiest of Mr. Wilson's portraits; an illustration of an eruption on the palm of the hand, which he terms erythema

annulatum, and of which he states that he has seen but two instances, but which we look upon as a variety of psoriasis palmaris, an opinion confirmed by the author's description of the case; an admirable illustration of urticaria perstans; and a drawing of a leg affected with melanopathia syphilitica. We cannot imagine how Mr. Wilson could have been tempted to publish the last as a portrait of this disease, to which it does not bear the least resemblance; it is, in fact, an excellent and unmistakeable specimen of what, in several country districts of Ireland, is called "trouts,"—a mottling of the skin of the legs, produced by constantly sitting opposite and close to a fire. Of this the author seems to have been aware himself, for he refers to its resemblance to the discoloration of the legs so frequently seen among the lower class of women in Paris, and attributed to the constant use of the "chauffrette;" moreover, in the case represented, he could not trace any primary syphilitic disease. We have at present under our care a case of melanopathia syphilitica of the legs, which could not possibly be diagnosed by a comparison with Mr. Wilson's portrait.

In the fourth fasciculus three forms of lichen are beautifully illustrated, namely, lichen simplex, the most faithful and best finished drawing of a skin disease we have ever seen; and lichen syphiliticum, *var.* disseminatum, and *var.* tuberculatum. The fourth plate is a good representation of roseola syphilitica, but Mr. Wilson observes that, "as it presents all the typical characters of the common roseolous rash, it may be accepted as a correct representation of idiopathic roseola." With him, however, we cannot agree, for the difference of the colour is too great, and might tend to mislead the inexperienced.

The first portrait of the fifth fasciculus is of a rare and remarkable affection, kelis, or as it is now commonly termed, keloides, which is classed by the author amongst "tuberculous affections of the derma." The growth in this case was unusually large and peculiarly shaped, but the symptoms did not seem to differ from those of other cases on record. The three other plates are of icthyosis,—or, as Mr. Wilson has rather pedantically chosen to term it, "xeroderma icthyoides,"—of lepra vulgaris, and of psoriasis vulgaris. The two latter, we must confess, have disappointed us much; the specimens of the two diseases chosen, bear too close a resemblance to each other to exhibit to the eye the distinctive characters of each; and neither of the plates is sufficiently *scaly* to represent nature.

Our estimation of Mr. Wilson's portraits of diseases of the skin may be readily judged from the full sketch we have now given of them. Taken together, equally perfect in artistic

skill, judicious selection, and close imitation of nature, their publication is no small boon to the medical profession, and one for which we most cordially offer our thanks to the author and spirited publisher. We have but one suggestion to offer to Mr. Wilson,—to select for publication, as far as practicable, in his earlier fasciculi, portraits of *generic* eruptions; he will be thus enabled to complete his publication much sooner, and take away from it the indefiniteness of completion which it now promises. If we are to have but eight plates published annually, it could not possibly be completed in the lifetime of any ordinary individual, should the present system of representing rare and *specific* eruptions chiefly be continued. To the artist we must say, that we would prefer a little more of the care he has bestowed on the accessaries of the portraits, namely, the dress, &c., of the patients, applied to the delineation and finish of the disease represented.

M. Cazenave's magnificent work is a fit companion for that of Mr. Wilson, and we should not wish to draw any invidious comparison between them. It consists of his lectures on diseases of the skin, illustrated by folio coloured engravings on copper, from drawings by Bocourt. Each livraison contains five illustrations; of these six have been published, one appearing every two months, and it is expected that the entire will be completed in about twelve numbers.

The third work on our list forms one of the volumes of what is intended to be a complete library of practical medicine, now in course of publication under the superintendence of Dr. Fabre. No pretence to originality is made in any part of the series; it consists entirely of selections from the best writers of every country, on each subject, strung together by the editor. Being exceedingly well and judiciously executed, though in defiance of both the law and justice of copyright, it forms a most useful work of reference, and is especially valuable to the medical writer or lecturer. There are no illustrations given with it, nor is it announced that any are to appear.

Some years since Dr. Burgess published an English translation of the excellent French manual of MM. Cazenave and Schedel on Diseases of the Skin, and having applied himself especially since then to the study of this class of affections, we are now presented by him with an original work on those eruptions which occur on the face, head, and hands. He states in

his preface that he is indebted for the greater part of the information contained in the volume to the hospital of St. Louis in Paris, and to Biett and Cazenave; he has also observed the Italian treatment of skin diseases, "particularly in the hospitals at Rome, Florence, and Milan." The plan adopted by the author is a good one, and the task he has undertaken is very fairly executed; we must, however, acknowledge that we should prefer a work, the conclusions in which were drawn from the results of practice at home, as difference of climate produces a most marked effect on diseases of the skin, and consequently on their treatment. Dr. Burgess's work is, therefore, chiefly valuable as enabling the British physician to test fairly the practice adopted by his continental brethren in those so generally intractable affections.

We do not purpose to enter into any review of the contents of this volume; on many points we differ from the author, but we hold that any writer who supports his opinions with arguments deduced from practical experience is fairly entitled to that estimate of value which a reader may place on them without being biassed by the "we" of the critic, unless when the statements put forward are manifestly incorrect. To this latter charge Dr. Burgess has left himself open at page 227, where he describes psoriasis dorsalis, following the mistake so commonly made, and which we have already adverted to when describing Mr. Wilson's plates.

Dr. Burgess has appended to his volume one plain and four coloured drawings. The former affords an excellent illustration of our present state of knowledge as regards the anatomy of the skin and its functions, and is selected from MM. Breschet and Roussell's *Nouvelles Recherches sur la Structure de la Peau,* published at Paris in 1845. Of the coloured plates, three are reduced copies from Cazenave's large work, and the fourth, which is an original drawing of acne, is so exceedingly unlike that disease that it might almost as well receive any other name. All these coloured illustrations, indeed, are badly executed; and we cannot avoid regretting that the beautiful originals, which we have just introduced to our readers, should have been so miserably travestied. Fortunately for the intending purchasers of Dr. Burgess's volume, an edition is published at a much lower price, without the plates.

We had expected much from Mr. Dendy, from the opportunities he has for so many years enjoyed as senior surgeon to the Royal Infirmary for Children in London, but we have been

most grievously disappointed, both in the letter-press and illustrations contained in this first part of his work. Assuming the title applied by Mr. Wilson to his plates,—a most unwarrantable plagiarism,—we reasonably enough thought that we should have seen "portraits" of diseases of the scalp, but did not for a moment imagine that we were to be presented with vile caricatures. Mr. Dendy ought at least to have learned "from his long and careful observations in public and private practice," of which he boasts in his introduction, that eruptive diseases of the scalp are not be laughed at. We therefore think his present publication most uncharitable towards his patients, as it cannot fail to excite the laughter of the profession; and we entreat of him, when he is next about to exercise his caricaturing powers (the drawings are his own), to choose a less serious subject.

To be serious ourselves,—which indeed we find it very difficult to be with Mr. Dendy's "portraits" open before us. The four plates contained in this number are published as lithographic representations of what the author terms crustula granulosa, crustula scabrosa, crustula viscosa, and crustula favosa. Were it not that he has given a long list of synonymes of each, we should have supposed that he was illustrating some new eruptions of the scalp, so unlike are his drawings to anything we have seen in nature, though it is stated on each that they are drawn from life. We will not waste our own time, or our readers' patience, by attempting any description of them, but we must confess our regret that the respectable publisher, whose name appears on the cover, should have permitted such burlesques on art to have issued under his auspices; a mere glance at the first drawing in the number must have convinced him that, from its close resemblance to a shower of small pebbles falling on the head of a child cut out of pasteboard, it could not possibly be a representation of an eruptive disease having its seat on the head of a living being.

The author's descriptive powers with his pencil are only to be excelled by those with his pen. Meagre and confused in the extreme, they exhibit about the worst specimen of medical writing that it has ever been our critical duty to notice; indeed we are almost ashamed to have classed such a publication with the other works we have spoken of in this review; the only apology we can offer for doing so is, that our position as faithful journalists would not permit us to pass it by without severe condemnation, and its marked inferiority forbad our devoting a distinct article to a notice of it. The amount of information contained, its character, and the style of the author,

may be judged from the very last paragraph; we cannot afford a longer quotation. He is speaking of the treatment of favus:

"At the same time, cinchona in camphor mixture, with highly nutritious diet, should be administered, with sea air, gentle exercise, &c., to restore the systemic energy."

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1. *General Board of Health : Report on Quarantine.* Presented to both Houses of Parliament by Command of Her Majesty. 8vo. pp. 172. London, Clowes and Sons. 1849.

2. *Report on the Fever at Boa Vista.* By Dr. M'William. Presented to the House of Commons in pursuance of their Address of the 16th of March, 1847. 4to. pp. 112.

3. A "*Copy of Dr. King's Report on the Fever at Boa Vista.*" Return to an Address of the Honourable the House of Commons. Dated 4th of February, 1848. 4to. pp. 16.

4. *A Letter addressed by Sir William Pym to the Lords of the Council, relative to a Report on the Fever at Boa Vista, by Dr. M'William.* Presented to the House of Commons, in pursuance of their Address of May 14, 1847. 4to. pp. 16.

5. *Dr. M'William's Remarks on Dr. King's "Report on the Fever at Boa Vista."* Ordered, by the House of Commons, to be printed, 10th March, 1848." 4to. pp. 15.

6. *Return to an Address of the Honourable the House of Commons, for "Copy of the Letter of the Superintendent-General of Quarantine (Sir William Pym), to the Lords of the Privy Council, in Reply to Dr. King's Report upon the Boa Vista Fever, said to have been introduced into the Island by the 'Eclair' Steamer."* 4to. pp. 15.

7. *Observations upon Bulam, Vomito-Negro, or Yellow Fever, with a Review of a "Report upon the Diseases of the African Coast, by Sir William Burnett and Dr. Bryson," proving its highly contagious Powers.* By Sir William Pym, K. C. H., Inspector-General of Army Hospitals, and Superintendent-General of Quarantine. London, Churchill. 1848. 8vo. pp. 311.

Every one admits that the practice of quarantine inflicts very much personal annoyance and commercial inconvenience. A confinement of fourteen days in a dull and monotonous lazaretto, or in a small and uncomfortable ship, with stupid com-

panions, and nothing to be seen but the far-spread sea and sky, except it may be the scorched and arid heights of Malta, is sufficiently unpleasant to the young and ardent traveller, burning to realize those scenes of oriental witchery in which his imagination had so often revelled. And in these days of steam ships, and railroads, and penny-postage, when neck and limb are little accounted in the eager desire for electro-winged intelligence or rapid transit, it must seem to the all-venturing and competing merchant, not only an impediment, but an absurd mockery, to see his goods tossed, and exposed, and fumigated, during days or weeks, while in the mean time his calculations are disarranged, and so much of his capital is lying unproductive. But these are evils inseparable from the practice of quarantine; how much are they increased, and how often are others superadded, by the duplicity and roguery of those to whom its administration is frequently intrusted! False reports of epidemic diseases, circulated by commercial gamblers to interfere with free pratique from particular ports; political animosities gratified by the infliction of comparatively lengthened detention of the ships of certain nations; these, and many other considerations, have long caused British statesmen of very opposite parties to look with much disfavour on quarantine regulations, and to desire to relax them as much as possible. If it be proved that quarantine is unnecessary for the preservation of the public health, no one can be desirous for its continuance, except perhaps the officials who are paid for its administration.

The difficulty of enforcing a strict quarantine does not properly belong to the question, because, if it be necessary for the public health, it ought to be strictly enforced; and any negligence or laxity which may have been hitherto permitted in its execution would in this case only be an argument for more stringent regulations. It may, however, be used as a proof of the little faith which quarantine officers in this country have in the power of fomites to convey disease, the very imperfect manner in which they habitually carry out the orders of Council for the purification of goods from infected places. By order of Council, cap. xxxii., it is regulated, that "all bales of cotton shall be opened from one end to the other, and so much taken out as to leave room for handling daily the interior of the bale;" but the evidence given before the Committee of the House of Commons in 1824 shows that this order is not obeyed. Mr. Sanders, superintendent of quarantine, is asked:

"Are there any of the first class of goods ever left without the probationary airing?—Yes. Is it not as necessary that the whole should be aired as any part?—So it would appear; but in the case

we had within these few days, of a ship from Alexandria, with a thousand bales of cotton, it would have been impossible to air those within fifteen days upon deck. The bales of cotton are cut open? —They are. And the cotton is aired upon the deck?—Yes. The cotton is ripped open from one end to the other, and some of the interior removed. Is the whole of the interior of the cotton opened to the air?—Not with a clean bill of health."—*Report on Quarantine*, p. 69.

Now it is to be remarked that the order of Council makes no distinction founded on the bills of health; and on the presumption that fomites can convey contagion, this want of distinction is unjustifiable; for, as Dr. Maclean says:

"A ship sailing with a clean bill of health might have her cargo foul, as having been packed and shipped during the prevalence of plague; whilst a ship sailing with a foul bill of health might have her cargo clean, as having been packed and shipped previous to the commencement of the pestilence."—*Report on Quarantine*, p. 67.

"In Ireland, however, whether the vessel arrives with a clean or foul bill of health, there appears to be no airing of the cargo whatever. Mr. James M'Neil, superintendent of quarantine at Carlingford, in his evidence before the Committee states: 'There is no floating lazaretto, nor any lazaretto on shore, at Carlingford. There is no other place to air goods than the deck of the vessel in which they come. In the last three years there have been forty-two vessels. There is no means of examining or airing the cargo with a foul bill of health. They never do more than hoist the bags upon the deck, as many as they can get at near the hatches. Believes the bags have never been opened. The captains have always stated to him that it was impossible to do it. Has never heard of any sickness at Carlingford. There have been arrivals from Smyrna, and he believes with hides and skins from Africa. There is no physician within ten or twelve miles. Vessels with foul bills of health, he understands, have repeatedly arrived at Carlingford. In point of fact, a bale of cotton is not opened at any time. There has sometimes been much cotton and rags.' "—*Report on Quarantine*, p. 70.

Now these extracts show that the practice of quarantine regulations has been so careless and lax, that they do not afford, at least as far as fomites are concerned, the slightest protection. Yet neither the quarantine officers in England, who do handle to some extent the cargo, nor the operatives in the factories in Ireland, who work with cotton which must often be infected, and which has never been purified, have in any instance, during the last century and a-half, exhibited a symptom of plague or yellow fever. We do not say that this fact is sufficient to disprove the doctrine of contagion through fo-

mites, but it at least demonstrates the inutility of quarantine regulations.

It may be perceived that we are not by any means advocates for the continuance of quarantine, at least in the British Islands. Indeed we do not hesitate to say that we consider its practice in these countries positively injurious, from the alarm and excitement it invariable produces. Read the following extract from a letter by a young lady detained in quarantine, after her passage from Hamburgh.

"It is all very well to say, 'don't be afraid of the cholera;' but those who have seen what I have within these last few days will feel differently. On our arriving at Gravesend, a custom-house officer came along side, and told the captain the ship must be kept in quarantine, and that if he allowed any of the passengers or crew to land he might be shot. They then took away our letters without coming on board, and said they would send every day for the letters. You can imagine our consternation and alarm, and then the horrid yellow flag! and we were told that if any one was taken ill, or died, we should be detained I know not how long! Another ship was near us, also in quarantine, and with a sailor in it, who had died. Soon we saw this ship moving slowly down the river to the Nore, that the body might be committed to the deep. Although it rained in torrents, we saw all the passengers standing on the deck, as they were afraid to go below for fear of the cholera. If you could have seen that melancholy sight! I shall never forget it. Need I endeavour to paint to you our feelings, not knowing how soon we might be in the same sad predicament. How we counted the hours, and how we rejoiced when the welcome news reached us that we might land once again in England!"—*Report on Quarantine*, p. 132.

Now this poor lady might have avoided all this fright and annoyance, if she had gone round by Ostend instead of embarking from Hamburgh; yet the danger of communicating the disease by contagion would be as great in the one case as in the other.

It seems to us that the proper way to view the question of quarantine is, to inquire how experience has shown it to act as a preventive against the three diseases to which it is especially applied; these are, plague, yellow fever, and cholera. We have seen that the regulations intended to keep off plague have been so loosely executed, that in reality no impediment to the ingress of plague exists; and yet this disease has not shown itself in Great Britain for the last century and half. Indeed we have a right to conclude that, in the improved sanitary condition of England, plague could not exist as an epidemic. Yellow fever, again, is essentially a tropical disease, and, as such, has never forced its way into the British Isles,

except to such an insignificant extent as to be unworthy of legislative notice. Lastly, the experience which we possess of the progress of cholera over the face of the globe justifies us in the belief that no strictness of quarantine arrangements could, in a country having such numerous and complicated relations with other nations as our's, effectually exclude that disease from our shores. Experience thus shows us that quarantine is unnecessary for keeping out plague and yellow fever, while it is useless when opposed to cholera.

It may be alleged that, although quarantine may seem to us unnecessary and useless, yet in the present state of opinion amongst continental nations, it is right to maintain the restrictions it imposes, inasmuch as otherwise much inconvenience might arise from the alarm with which our ships might be regarded in foreign ports. But the Reports of the Commission of the French Academy, that of Professor Sigmund to the Austrian Government, and the conduct of Holland, which has never instituted any regular system of quarantine, lead us to believe that the great nations of Europe are, as regards this matter, in advance of our own. France has abolished quarantine with Algiers since it came into her possession; and the Report of the Special Committee of the House of Assembly of New York, in 1846, demonstrates that public opinion in America is advancing in the same direction. But, if it were otherwise, and that all the rest of the world had the greatest faith in the efficacy of quarantine, such a consideration ought not to influence the conduct of the British Legislature; for experience proves that, at the very time when quarantine has been put in force in this country, the nations that still believe in it have put restrictions on their intercourse with us. Thus, as soon as it became known that the Eclair was put in quarantine, Lisbon and Naples at once refused admission to British ships. In truth, as long as we have yellow flags and quarantine stations, and an omniscient and world-blabbing Press to spread abroad the tidings of dismay and pestilence, so long will less enlightened and more prejudiced nations emulate us in the race of error.

The strongest argument against the continuance of quarantine is certainly this,—that it is not only mischievous in interfering with commerce, terrible to the feelings of those that are subjected to it, an instrument of abuse in bad hands, useless in some instances and unnecessary in all,—but that it actually produces the very evil that it is intended to prevent. What better way could be devised for generating an infectious disease, than by shutting up a number of persons in a confined

and dirty ship, off a stagnant coast, without medical advice, with unusual provisions, without occupation, and, to sum up the whole, with spirits disheartened from the very cause of their proscription. Dr. Johnson said, "a ship is a prison, with a chance of being drowned;" but in quarantine, off Stangate Creek, there is not even the latter stimulus to relieve the tedium of detention. The sanitary condition of our shipping is indeed very bad under ordinary circumstances; how much worse must it be when the vessels are detained in quarantine? A great improvement has certainly been effected, both in the naval and merchant services, in comparison with their condition during the last century, when whole crews were sometimes swept away by scurvy or ship fever; but in small vessels and emigrant ships great improvements are still required. This will be at once seen by a comparison of the causes of mortality between seamen and the inhabitants of cities. In London 27 per cent. of the deaths occurring yearly among all classes and at all ages, die of epidemic, endemic, and contagious diseases; of the deaths occurring at the age of 15 and upwards, only 6·7 per cent. are from these causes; amongst artisans of all ages 21·5 deaths per cent. proceed from the classes of diseases mentioned; whilst 55·9 per cent. of the deaths of seamen dying at sea occur from fevers, cholera, influenza, scarlatina, &c. This is a tremendous mortality from zymotic diseases; and it is to be observed, that it has been well ascertained when there is a high mortality from these causes, the general mortality is also always high. Passengers on board ship are, it would appear, much more liable also to epidemic, contagious, or endemic diseases, than similar persons on shore. And this excessive mortality is easily explicable by an examination of the circumstances under which emigrants and sailors live.

Mr. Bowie says:

"I am of opinion that the houses and rooms in the close courts of Whitechapel, which I habitually visit, do not, as a rule, exceed, in the unhealthiness of their condition, the forecastles of ships, in which the filth is often as great, the air as close, stifling, and offensive, and altogether as likely to generate fever, and to cause it to spread if it does break out."—*Report on Quarantine*, p. 99.

Dr. Duncan, medical officer of health for Liverpool, speaking of the forecastles of the smaller ships in the Mersey, says:

"These places might properly be termed floating cellars, although they are in no respect equal to the inhabited cellars of Liverpool. Such cellars on shore, indeed, would be condemned as unfit for habitation under the provisions of our Sanitary Act."

When we couple the foregoing descriptions of the habitations of our merchant sailors with the peculiar influences to which they are exposed,—the odoriferous gales of bilge water within the vessel, and the perfume arising in rivers from littoral surfaces uncovered by the receding tide,—it is not difficult to understand why sailors should be peculiarly subject to fevers and analogous diseases.

An Irish gentleman, affected by the accounts so commonly received in this country, of the frightful sufferings and mortality among the poor emigrants in 1847, had the magnanimity, in the effort to alleviate them, to subject himself to dangers and privations, at the mention of which even the laurels of a Howard must pale. Hear his description of an emigrant ship, even under the recent regulations, under the superintendence of zealous and able government agents, and the danger of heavy penalties for the infraction of rules:

"Hundreds of poor people, men, women, and children, of all ages, from the drivelling idiot of 90 to the babe just born, huddled together without light, without air, wallowing in filth, and breathing a fetid atmosphere, sick in body, dispirited in heart; the fever patients lying between the sound, in sleeping-places so narrow as almost to deny the power of indulging, by a change of position, the natural restlessness of the disease; by their agonized ravings disturbing those around, and predisposing them, through the effects of the imagination, to imbibe the contagion; living without food or medicine, except as administered by the hand of casual charity, dying without the voice of spiritual consolation, and buried in the deep without the rites of the Church. The food is generally ill-selected, and seldom sufficiently cooked, in consequence of the insufficiency and bad construction of the cooking-places. The supply of water, hardly enough for cooking and drinking, does not allow washing. In many ships, the filthy beds, teeming with all abominations, are never required to be brought on deck and aired; the narrow space between the sleeping-berths and the piles of boxes is never washed or scraped, but breathes up a damp and fetid stench, until the day before arrival at quarantine, when all hands are required to 'scrub up,' and put on a fair face for the doctor and Government inspector."

Yet in this horrid den this noble-spirited gentleman immured himself, for the purpose of becoming fully informed as to the evils under which his emigrating countrymen laboured; and, if it should come about, in that future where the only hope of Ireland lies, that her sons may be permitted to stay at home or go abroad surrounded with some portion of those comforts which attend the children of other and more favoured lands,—deep in their grateful memory, as one of the most devoted of her patriots, be the name of Stephen De Vere.

The condition of sailors in small ships, and of the poorer emigrants even in large vessels, being such as has been described, we may well imagine the effects of quarantine in exaggerating their sufferings; and we again ask if it be possible for human ingenuity to devise a more likely combination of circumstances whereby to generate an infectious disease? It is not necessary for the argument to add any fictitious colouring to render the mischiefs of quarantine more distinctly manifest than the simple facts represent them; and we, therefore, regret to find the Board of Health availing itself of very equivocal, and, occasionally, of evidence already rebutted, in its anxiety to plead for its favourite cause. Thus Sir W. Burnett's exaggerated description of the detention of the Eclair is alluded to without the slightest hint that Sir W. Pym had distinctly contradicted several of the assertions contained in that description (Pym on Yellow Fever, p. 159); and again, the Board thinks proper to reiterate the charges commenced by Dr. Bryson against the salubrity of Stangate Creek, although without other testimony than the grumbling of naval officers, who, no doubt, find it a very lonely and irksome station,—"enough to give a fellow the plague to look at it," as one of them very characteristically remarks; and yet it is a well known fact that this very locality is the spot in which her Majesty's ships *in ordinary* have been laid up for years; that Dr. Brown, the medical superintendant for the last twenty years, has given a favourable account of its healthiness; and, lastly, that its salubrity or insalubrity has just as much to say to the question of quarantine, as Goodwin Sands have to Tenterden steeple. We repeat, that we regret that the Board of Health should have, in any degree, mixed itself up with the official squabbles between the heads of the naval, medical, and quarantine departments, particularly as we suppose truth, and not special pleading, to have been its object. And we confess that, in our unbiassed judgment, we consider that, on its own merits, the cause of quarantine stands condemned as being inefficacious as regards the objects for which it was intended, and injurious in its direct operation.

We perfectly agree with the Board of Health as to the substitutes for quarantine which should be instituted. The following extract so fully expresses our own sentiments, that we prefer quoting it rather than attempt describing them in words of our own:

"That as far as relates to the causes of epidemic diseases generated at sea, the principle of the concentrating of responsibility on the shippers, in making it their pecuniary interest to complete the

voyage with healthy passengers, operates most effectually in the cases where it has been applied, such as to emigrant, transport, and convict ships, and should be extended to all cases; and that, in respect to ships in port, the regulations applied to the prevention of the spread of epidemic diseases from houses in towns are applicable, and would practically be highly beneficial. That the substitution of general sanitary regulations to ships in port, for the existing quarantine regulations, would far more effectually extinguish epidemic disease, and afford better protection to the uninfected on shipboard, whilst it would relieve passengers and crews from grievous inconvenience, abate the motives to concealment of sickness and to false representations as to its nature, greatly lessen commercial expenses, and remove obstructions to the free transit of goods and uninfected persons which the existing system of quarantine occasions."—pp. 126, 127.

We have discussed, in the preceding pages, the arguments and recommendations which have issued from the Central Board of Health, with regard to quarantine; and we have done so, we hope, with sufficient liberality and moderation. We have considered the question of a repeal of the laws on its own merits, as judged by the standard of experience; and we have studiously refrained from complicating the subject by any reference to the contagiousness or non-contagiousness of disease, believing these to be topics entirely beside the question. If there be no such thing as contagion, then quarantine is manifestly useless; but if certain diseases be capable of propagating themselves from individual to individual, in that case the restrictions of quarantine ought to be immediately removed, as soon as it is shown that those restrictions are ineffectual in preventing the importation of disease; for, under such circumstances, it would be unnecessarily cruel to confine uninfected passengers and sailors in dangerous proximity to the sick. The Board of Health acknowledges this truth; it says that contagion "has nothing whatever to do with quarantine, the sole inquiry, with reference to this question, being, whether, however epidemic diseases may arise, quarantine can prevent their introduction into the country, or arrest their progress when there." Strange to say, however, after giving expression to so strong an opinion, the learned Board at once rushes into a discussion with respect to the doctrines of contagion; dogmatises most consequentially on a subject with which, according to its own showing, it had nothing whatever to do; and, finally, shelves itself on the very reef which, according to its own chart, lay entirely out of its course. The Earl of Carlisle and Co. have taken possession of the professor's chair, and announce, *ex cathedra*, the opinions which British subjects are

hereafter bound to entertain. But first it is necessary that the doctors should be put out of court. "You may go down, Gentlemen; your evidence in this cause is totally inadmissible. It is true, it is part of your special business; no doubt you have the best opportunities of observing; your minds are the best educated for investigating; you have no especial interests to serve to swerve you from a just conclusion; you have nothing else save truth to reverence; yet somehow everybody else, the minister, the speculatist, or the journeyman tinker, is just as competent to reason on this matter as you are."

"It is remarkable that the change of opinion which has taken place on this subject, in Great Britain, has advanced with greater decision and rapidity among non-professional persons engaged in commercial and public life than among medical men. It is not a technical question, but one of evidence, on which a person capable of observation is as competent to judge as any physician. Such a person, indeed, may have the advantage of having nothing to unlearn. The Spanish Cortes, in 1822, by a considerable majority, in direct opposition to the unanimous opinion of all the physicians who were members of their own body, being nine in number, as well as to the general belief of the physicians of Spain, rejected the project of a code of sanitary laws, founded on contagion, which had been prepared by three successive Committees or Commissions of Public Health. It is also observable that the committees of the House of Commons in our own country have generally indicated a more advanced state of opinion on this subject than the majority of the physicians whom they have had under examination."—p. 20.

Ha! ha! doctissimi doctores, take that!

Still the doctors are not so much to be blamed. They are gradually progressing. The Irish Board of Health deserves infinite credit for abandoning many of their old prejudices about contagion, at the word of command. And, after all, the committees of the House of Commons, the Spanish Cortes, and the "non-professional persons engaged in commercial and public life," have only hitherto been *advancing* in opinion; they had not arrived at perfection. It remained for the Central Board of Health to discover the philosophers' stone. The sages of Gwydyr House have found out the secret. Falstaff had an infallible instinct to perceive the heir apparent; but the doctissimi of Whitehall have a more subtle afflatus, a more profound sense, whereby to discern and fulfil the desires of the cotton lords of England. Lie down in the dust, ye ignoble vulgus, while we expound unto you the latest revelations which have been conceded by the sacred college of Gwydyr.

Well then, listen! Contagion is not infection. What in-

fection is it is not convenient at present to inform you; but remember that emanations are different from miasms; the latter can remain permanently suspended in the air, and keep travelling all the time, while the former diffuse and dilute themselves. Electricity and heat are very remarkable physical agents; what they do is not exactly known. But there can be no doubt with respect to epidemic atmospheres, though what they are we cannot tell; and, lastly, there is much virtue in the phrase, "peculiar morbific force." The Board of Health considers that the above is quite sufficient information for the present; and if by its aid you do not understand all about contagion or infection, it is not the fault of the Central Board of Health, nor of us.

Seriously, it is a matter of melancholy moment to see the legitimate march of medical investigation interfered with and retarded by the jostling of commercial and political interests. It has been considered by statesmen, to be desirable to remit or relax the restrictions which quarantine imposes on the intercourse of nations; and because it was conceived that a continued belief in the contagiousness of certain diseases might prohibit or retard this change, a systematic perversion of facts, with one-sided special pleading, has been pursued, without the slightest regard to truth or consistency, for the purpose of making the public think there is no such thing as contagion at all. We know not if the policy of statesmanship must be, from its nature, essentially Machiavelian in all circumstances. We are not sufficient adepts in the act of ruling free nations to be able to tell, whether it is always necessary that they should be allured to their interests by fictitious pleas, just as children are enticed to take the unpalatable although remedial draught, by sweetening with honey the edge of the cup. But this we do know, that all modern politics appear to be deeply imbued with a deceiving spirit; and, however intrinsically reasonable and excellent a proposed reform may be, its popularity is always sought for through the instrumentality of a clap-trap. From the extinction of Old Sarum to the latest sanitary improvement, we find similar agencies at work; and the big loaf and the abundant harvest are promised as the results of a change with which the promisers well know they have not the slightest relation.

This may be, for ought we know, a necessary attendant on the crooked workings of political artifice; but we, who are not diplomatists, but physicians, must regret to find subjects of the highest medical importance finding their way into this exaggerated and perverted atmosphere. The question of contagion is of this nature; it has been taken from its legitimate position;

it is no longer left to the observation of the physician at the bed-side, or to his reflection in the closet; but is bandied from blue-book to blue-book, and drawn through all the tortuous intricacies of official intrigue. As guardians of the interests of medical science, it is our duty to shield it from such injurious contamination; and therefore we shall not shrink from exposing the trickery that has been employed in this matter, to prevent or veil the truth.

We can bring forward no better example of the objectionable course pursued by the authorities in connexion with contagion, than by relating their conduct with respect to the steam-ship Eclair, and the island of Boa Vista. Circumstances have hitherto prevented us from reviewing the documents in our possession on these subjects; among these was the demise of our lamented contributor, Dr. Curran, to whom they had been submitted for examination. From unfinished papers which he left after him, we are enabled to present our readers with the following distinct and lucid history of the Eclair and Boa Vista catastrophe.

The crew of the Eclair was first attacked with fever in June, 1845, when stationed at the mouth of the Sheabar river. The disease was, however, soon got under, but broke out again at Sierra Leone, very shortly after. Whilst at Sierra Leone the crew were employed in cleaning out the Albert, which had been engaged in the Niger expedition. They were occasionally allowed to go on shore, where they were guilty of great irregularities, and several deserted. In consequence the Eclair, after remaining at Sierra Leone eighteen days, stood northwards, and anchoring at a great distance from the shore, the crew were again employed in cleaning out the Albert, which they had towed along with them, and preparing her for the service of the government at Gambia. On the 10th of August both vessels arrived in the Gambia, where the Albert was delivered up. Hitherto no disease, except the ordinary coast fever, had shown itself on board either vessel, and the Eclair sailed for the Cape de Verde Isles on the 15th of the same month, without the slightest ground for anticipating what afterwards occurred. The first case of yellow fever showed itself after she had been four days at sea, and on her arrival at Porto Sal Rey, the chief town of Boa Vista, August 21st, a passenger and four of her crew had died, and fifteen more were then ill. We are not in possession of any means of judging of the exact nature of the disease that raged on board, except that delirium, black vomit, and hemorrhages, were not met with on

the coast, but characterized most of the cases which occurred at sea.

Let us now, before going farther, take a rapid glance at some of the most prominent sanitary features of the island touched at by the Eclair. Boa Vista, the most eastern of the Cape de Verde isles, is a limestone rock lying on basalt, about sixteen miles across each way, but of most irregular formation, being deeply indented with bays on every side. The surface of Boa Vista is in general very low, but quite as irregular as its form. Hills, capped with basalt, and rising to an elevation of above 1000 feet appear in different parts, generally running from south-east to north-west. In consequence of this disposition, the cooling influence of the trade-winds which blow constantly from the north-east, is not felt at Porto Sal Rey the principal town, or the villages along the southern and western coast; whilst during the dry season whirlwinds of sand, forming mounds of forty or fifty feet high, are continually changing the appearance of the coast at the opposite side of the island. Viewed from a hill, Boa Vista appears a mere arid desert, without any trace of vegetation save an occasional cocoa-nut tree, or a small patch of corn struggling to maintain a precarious existence in the deep ravines cut out by the torrents which descend from the mountains during the midsummer rains. Notwithstanding, there are some large herds of bullocks kept by the inhabitants, and goats are tolerably numerous. How these animals are supported during the dry season always appears a puzzle to strangers, but the vegetation which springs up after the rains is most exuberant, and it is from this circumstance that the islands derive their name. The inhabitants, between 3000 and 4000 in number, are of all degrees of negro intermixture, and obtain a livelihood by making salt, loading vessels, cultivating a little corn and beans, or occasionally cotton, by fishing, or by tending their goats among the watercourses in the hills. They are hardy, active, and abstemious. "A little fish, some roasted Guinea corn, or a few beans, furnish the ordinary meal."

Eighty-six Europeans were resident on Boa Vista at the period of the Eclair's arrival there. Porto Sal Rey, the chief town, is situated at the northern end of an extensive bay on the western side of the island. The soil, of volcanic origin, with masses of basalt appearing through it, is but little raised above the sea, by which it is often inundated. The houses of the merchants and principal persons are ranged close along the beach, and some of those occupied by the Portuguese are roomy

and well-built. The upper part of the town is inhabited by the poor, many of them slaves, and is formed of filthy hovels crowded together in the most irregular and injudicious manner. The streets are extremely narrow, and as neglected as possible, it being a common practice to dig deep holes in the very centre of them, to seek for stones for building, and afterwards to leave the cavities thus formed to be converted into receptacles for every kind of filth. Behind the town, from which it is distant about a mile, a basaltic rock, called Reshee Hill, rises to the height of 900 feet. This hill lies to the north-east of the town, which is thus completely shut out from the salutary influence of the trade-winds. Between Reshee Hill and the town, the ground is perfectly level, and during the rainy season and for some weeks after it is mostly covered with water. In the centre are about 300 ponds for making salt by solar evaporation, the only manufacture carried on in Boa Vista. All the Europeans on the island reside in Porto Sal Rey. The number of the other inhabitants according to Dr. M'William, was 915. Rabil, or the New Town, distant from Porto Sal Rey about four miles, is situated on the *leeward* side of a ravine, which during the rainy season "forms a magnificent sheet of water nearly a thousand yards broad," whilst during the rest of the year it is a partially cultivated marsh, having scattered through it "large, green, fetid pools, with all kinds of decomposing matter, the effluvia from which," even after the lapse of nine months, "was most offensive." The inhabitants, amounting altogether to 1043, are extremely poor, living chiefly by being employed as labourers on board the vessels that touch at the island. The houses are mere hovels, generally dirty, and crowded together without any order. The most wretched part of Rabil is called Cabeckada. This part of the town, in which there are a few two-storied houses, occasionally resorted to as country residences by the Portugese, is named Boaventura. *Estacia de Baixo*, a small village with a population of 256, is situated on the opposite or windward site of the same ravine which it overhangs. The houses, small, but not crowded together, are built on a bare rock elevated more than 100 feet above the sea, and well exposed to the trade-winds. *Moradiuha*, also on the windward side of the ravine, but at the base of the hill on which Estacia de Baixo is built, has a population of 101. *Estacia* six miles south-west of Rabil, lies at the base of a hill which shelters it from the trade-wind. The houses are small and irregular, and the population 328. *Joào Gallego, Cabeça dos Tharafes*, and *Fundo das Figuẽras*, all lie along the eastern coast, and contain the same class of popu-

lation and accommodations. The first, however, with 277 inhabitants, is situated in the centre of a large plain, which though flanked by mountains, is pretty well exposed in front to the trade-wind. The second village stands on a low sandbank half a mile distant, and has a population of 409 persons. *Fundo das Figuēras* is built on a slight elevation of sandstone, and has 529 inhabitants. All these villages have a range of high hills behind them, or to leeward, at the distance of a few miles, and between them and the sea, distant two or three miles, there are extensive ponds for making salt by evaporation, which, though not very close at hand, lie in the direct line of the prevailing wind, and must considerably impair their natural salubrity. *Espinguera*, and *Agua dos Caballos*, places of refuge from fever, are both situated on mountains close to the sea, and fully exposed to the refreshing breeze. If the reader will now bear in mind the above description of Boa Vista, he will find that it will serve to explain many circumstances in the history of the epidemic to be afterwards alluded to.

We left the Eclair at anchor in the bay called the English road, in which Porto Sal Rey is situated. Mr. Kenny, an English surgeon, being the only medical man then at Boa Vista, by the request of the Governor-General visited the sick, and having given a certificate that the disease was but the common epidemic fever of the coast of Africa, the crew were at once allowed to have the freest communication with the town, and a large quantity of foul linen was sent ashore the same day. This linen lay in the British Consul's stores that night, and the next day was distributed amongst seventeen of the washerwomen of the town, to be washed. Not one of the persons who had to do with this infected linen, soiled with the blood and excrement of the dead and dying, and brought from a vessel in which a very fatal fever had been raging for months, had the slightest illness *until long after disease had become general in the town*,— a very remarkable fact, but one perfectly in accordance with what we know as to the sale of plague-spotted garments in the bazaars of Turkey, and many other equally cogent proofs of the correctness of the recent academic conclusion as to the incapability of merchandize to harbour the miasmata of plague.

On the 25th, Captain Estcourt went to reside at the house of Mr. Macauley, Her Majesty's Commissioner Judge of the mixed Commission Court of Boa Vista, giving up his own cabin for the accommodation of the sick. Notwithstanding these arrangements, the fever cases on board continued to increase, and it was at length deemed advisable to land all the sick. As soon as this intention was made known to the

Governor-General, who seems throughout to have acted in the kindest and most condescending manner, he placed at Captain Estcourt's disposal, for the use of the sick, the fort Duke of Braganza, situated on an inlet at the entrance of the harbour. This fortress, from the accounts given of it, by Dr. M'William, by the Portuguese surgeon and by others, whose evidence is detailed in the report, seems to have been, in all respects, the worst suited that could possibly be imagined for conversion into an hospital. It is to be remembered that the Eclair arrived at Boa Vista at the commencement of the rainy season, during which the atmosphere is constantly loaded with moisture, whilst the vertical rays of a tropical sun heat the air to the temperature of a furnace. The fort to which the sick were removed was situated on the southern extremity of a dark basaltic rock sloping towards the sun, and completely sheltered by the high lands of Boa Vista from any cooling influence which might be expected to arise from the north-east trade-wind, which blows during the greater part of the year. The sick were lodged in some dilapidated buildings, surrounding a central court-yard, ninety-three feet long by fifty wide, and which was closely shut in by a very high wall. The hospital rooms formed two stories, one above the other. The largest was *sixteen feet square, and nine high, and in it were lodged twelve patients.* The other three rooms were none of them more than half as large, and were, even in the cool season, when visited by Dr. M'William, "close, hot, and miserably ventilated." What must they have been when the Portuguese surgeon complained of them as "extremely crowded" with patients, betwixt whom he could hardly pass, and that too at the very hottest period of a tropical summer! Sir William Pym may well speak of this fort as "a sort of oven," and the only wonder is, that any of the Europeans who occupied it should have been removed alive. It does not appear how the healthy part of the crew was accommodated, except that they lived in some of the dilapidated sheds in the court-yard. A military guard of three soldiers occupied the hospital along with the sick; they were almost always in the room with them, and at night slept in the piazza in front of the principal apartment. The healthy officers and sailors mingled freely both with the inhabitants and with their sick comrades, and some of them slept occasionally in the tower of Porto Sal Rey. The first, a native guard, was on duty in the fort four days. One of them, the day after the sick were brought in, complained of headach, which, however, was relieved by bathing with vinegar, and he continued on duty some days longer. He was afterwards

affected with a kind of mild febrile attack, which lasted nearly a month. He was attended by his mother and relatives, and visited by his friends, none of whom seem to have thereby received any injury. His two comrades enjoyed perfect health, both during their residence in and after they left the fort. The second guard consisted of two negro natives and one European, who were on duty a week, and left quite well. They were relieved by four soldiers, two of whom were Europeans and the others negroes born on the island. They had been on duty eight days when the Eclair sailed, and they were all then in perfect health. The disease was mean time not merely unchecked by the landing of the crew, on the contrary there had been but five deaths altogether up to the arrival of the Eclair at Boa Vista, but now there were sometimes five deaths per day, and sixty fresh cases had been declared since the occupation of the Fort. Among the deaths was that of Mr. Hartman, the assistant surgeon, and among the new cases was Captain Estcourt, who, for three weeks, had been residing with Mr. Macauley, the Commissioner Judge, but yet had been unremitting in his attention to the sick. On the captain's removal to the fort a consultation was held with the medical officers of Her Majesty's ship Growler, which arrived at Boa Vista on the 6th of September, at which it was finally determined that the sick should be re-embarked, and the Eclair proceed at once to Madeira, and thence to England, in case no amelioration should meantime have declared itself. Accordingly, the Eclair, in company with the Growler, sailed from Boa Vista on the 13th of September, having on board as surgeon Mr. Maclure, and as assistant surgeon Mr. Coffey. Mr. Maclure, having got promotion was going home in the Growler, as a passenger, when, having perceived Mr. Maconchie almost worn out by constant attendance on the sick, he volunteered to take his place. Mr. Coffey, his assistant, had also voluntarily proffered his services when Mr. Hartman was taken ill, and had been actively engaged among the sick at the fort. The courage and devotion of these generous men, in thus hazarding their lives in such a "forlorn hope" is the more pure and noble as it is quite free from that element of *ferocity* which forms so large a part of the military character; the riches, titles, and orders, for which the soldier fights are, in the British service, far too rare an acknowledgment of the peaceful virtues of medical heroism and benevolence, to be regarded as having even influenced their conduct in the least degree(*a*).

(*a*) These sentiments are singularly affecting, as coming from one who was so soon to stamp the seal of his own fate on their sincerity. It will be

We must now go back to consider some other circumstances connected with the Eclair's visit. After the removal of the sick from that ill-fated vessel forty-one labourers from the shore were set to work, assisted by the crew, to give the vessel a thorough cleaning, and afterwards to get on board various stores for the voyage. These men were employed both on deck and in the hold, for about a week, and each at night returned to his own village to sleep. They were also on board the Eclair when the sick were re-embarked previous to sailing for Madeira, yet not one of them was attacked with the prevailing disease until some weeks after, when the fever had broken out at several places on the island. Two, however, were affected with slight ordinary fever a few days after the departure of the steamer. Their cases were as follows:—Luis Fortes Pathi lived in Caheçada, the very filthiest and most unhealthy locality in the whole island, and had been engaged a good deal in the hold of the Eclair, having spent an entire day on the lower deck pumping out bilge-water. The day after the steamer sailed he went to Moradiuha, to celebrate the "Feast of the Exaltation of the Holy Cross" a religious ceremony, of which dancing and gesticulation form by far the most important part. On the fourth day of the feast, whilst the dance was going on, Pathi became sick, and had headach, with pain in the back, which soon compelled him to take to bed. After lying *eight days* at Moradiuha he was removed to his own house at Rabil, where he was three weeks longer before he completely recovered. No one at Moradiuha who had lived in the house with him suffered any injury; the disease did not appear there until three months after, and even then it proved fatal only in two cases. Four days after Pathi was brought back to Rabil, another labourer, Luis Santos Nazario, who had been employed in precisely the same way, but who inhabited the lower and better part of the same town, had also a febrile attack, which, however, lasted only three days. In Pathi's neighbourhood the fever spread at once to others, and the mortality was one in 13·5; but in Nazario's it did not affect any one else until two months later, when persons who had got it in other places were removed thither, and the mortality was then but one in 21·7. We shall pass unnoticed the men employed in the launches, and various other persons who either boarded the Eclair or were in direct communication with her crew, though they escaped the disease until it became

in the recollection of our readers that Dr. Curran lost his life from fever contracted in the exercise of most devoted professional heroism.—Ed.

general, in order to come at once to the history of the three soldiers who were on duty in the hospital during the last week of the Eclair's stay. The day the sick were removed these men occupied the hospital room, which was swept out by one of them. Dr. M'William, however, from the condition in which he found the apartment in question, doubts whether any attempt had ever been made either to clean or purify it. The following day the two Portuguese were taken ill, and both died within four days, one in the room occupied by the Eclair's people, and the other under the piazza in front of it. Before their death two other men had been sent from the barracks to assist the survivors, who all remained in the fort four or five days longer, sleeping in one of the small rooms off that used as an hospital. The dead bodies, which smelt most offensively, were removed and buried in the sand by soldiers sent from the garrison, aided by those in the fort. A man twice engaged on this service had formed one of the previous guard, and he afterwards came from the town, with two other soldiers, to take the place of the survivors. The relieved soldiers, as one of them had been complaining for some days, did not go at once to the barrack, but remained for a week in a small house in the worst part of the town, close to the marsh, where they were visited by all their friends and acquaintance, amongst whom fever spread rapidly, and was very fatal. They then returned to the barracks, and the one who was still complaining got violent fever four days afterwards, whilst residing in the house of a store-keeper.

The party at the fort slept in the room so long occupied as an hospital, and from which two dead bodies, in a very advanced state of decomposition, had been but just removed. On the second day, the man who had been there previously along with the Eclair's people, and who had afterwards been twice employed in burying the dead, was attacked with fever, and was at once removed to the barracks, where he got well in three days. It is necessary to inform the reader that the barracks stand in the best part of the town, close to the sea-shore. We have seen that it was, from the very earliest period of the epidemic, exposed to contagion in the very highest possible degree, soldiers being carried there from the hospital whilst actually labouring under fever ; yet the disease did not spread, and a single death did not occur in the barracks until the 6th of November, long after it had been raging in the town. The lower part of Porto Sal Rey was, however, exposed to danger from other sources. It contained the grog-shop of Da Silva Georgio, in which the petty officers and seamen of the Eclair

spent most of their time when on leave, and in which some of them slept. Georgio himself had slight fever after the arrival of British sailors at his house, but not one of the crowds of persons frequenting the place had it after him. Mr. Macauley's residence was also there; but though the Captain of the Eclair was taken ill in it of the disease of which he died, the entire family and servants completely escaped. Lastly, the house in which the officers of the Eclair resided from the very first was in the same quarter; but, although these officers and their servants were in constant communication with both the steam-vessel and fort, including the sick, and though several persons had been conveyed thence to hospital, where they died, it does not appear to have been even suspected of giving rise to any disease; and certain it is that the lower town continued almost free from any disease many weeks after the fever had become most deadly in the miserable district adjoining the marsh. Now when we consider, in addition, that the first cases of the disease *imported* into Boaventura, Estacia de Baixo, Moradiuha, and Fundo das Figueras, the sanitary condition of which is very high, were in general quickly cured, and did not infect others; and when we compare the mortality in each place affected with its position and circumstances, it is imposible not to see that the experience of Boa Vista, if it does not establish, certainly does not contradict the conclusion arrived at by the French Academic Commission in reference to the transmission of the plague.

We are glad to have had the opportunity of giving the history of the fever at Boa Vista, written by one who certainly was not an advocate for contagion. Dr. Curran's sense of candour and fairness would have prevented his giving a false colouring under any circumstances; but what gives peculiar value to the foregoing account is, that his views were rather opposed to the existence of contagion, even in typhus fever. However, what does the foregoing description show, but that in every instance the persons at Boa Vista first attacked were those who had intimate communication with the crew of the Eclair? Dr. M'William having, with extraordinary diligence and discernment, collected all the available evidence to be obtained, was led to the following conclusions:

"That the fever on board the Eclair was primarily the remittent of the African coast, which is not a contagious disorder, but that the disease acquired contagious qualities in virtue of a series of causes. Second, that although there exists on the island of Boa Vista a physical cause capable of producing remittent fever, yet it does not appear that that cause was in action when fever broke out in Sep-

tember, 1845, and that the island was quite healthy when the Eclair arrived there. Third, that the disease of which the Portuguese soldiers died at the fort (Duke of Braganza) on the small island, was that which afterwards ravaged Boa Vista, and the same as that which prevailed among the crew of the Eclair. Fourth, that the fever was propagated throughout the island almost exclusively by direct intercourse with the sick, there being only two cases in which there appears any probability of persons having been infected in any other way. Fifth, that although those who had passed through the fever were much less liable to the disease than those who had not, yet it would appear that a person having had one attack possesses no absolute protection against a second attack. Sixth, that, connecting the whole of the circumstances attending the arrival and stay of the Eclair at Boa Vista, with those under which the disease appeared on the small island, and afterwards on Boa Vista itself, leaves no doubt of its having been introduced by the Eclair. Seventh, that in all probability the mortality from fever on the island was much increased by the want of proper nourishment for the people, as well as by the total absence of medical assistance for some months. Eighth, that the disease had in no case spread to any of the other islands of the Cape de Verd archipelago."

We have carefully examined the evidence collected by Dr M'William, and we now unhesitatingly assert that the above conclusions flow as legitimately from the premises, as moral reasoning will admit of. But these were not the kind of conclusions which the Government required, and the Director-General of the navy medical department had a much clearer vision as to the kind of thing wanted, than to permit these embarrassing deductions to pass unquestioned. We remember a clown in one of Farquhar's plays, who states that, if he was made a justice of the peace, he would be a very honest man himself, but keep a great rogue for his clerk. Sir William Burnett appears to be of this clown's opinion; he would like to act honestly and uprightly himself; thus when, in 1824, he was required to report on the imputed introduction of yellow fever into the island of Ascension, by His Majesty's ship "Bann," he came to conclusions very analogous to those of Dr. M'William. But circumstances are now changed; the mercantile community had not then set its heart on the abolition of quarantine; it was not then thought that the doctrine of contagion was an impediment in the path of free trade; a reformed Parliament had not as yet transferred the reins of power from the landholding borough-mongers to the millionaires of the manufacturing interest. But now a new order of things has arisen, and the politic Director-General, altogether incapable, we are convinced, of anything personally dishonour-

able, is nevertheless disconcerted at the simplicity and straightforwardness of his employée; and, finding it necessary to discountenance his conclusions, sends out Dr. King, a decided non-contagionist, to endeavour to palliate the mistake in tactics committed by his predecessor.

Poor Dr. M'William!—How erroneously you imagined that the qualities required in a medical reporter were, honesty, ability, industry, and professional knowledge. Why you have committed mistakes of the greatest magnitude on every side! You have mortally offended the Superintendant-General of Quarantine, for you express the opinion that remittent fever may change into a contagious disease; and, worse still, you state that an individual may have the latter more than once. And, on the other hand, you thought, forsooth, that you were at liberty to change your mind, and, from being a confirmed non-contagionist, to become an advocate for contagion. We can bear witness from your writings that you are an honest man and a sound physician, but not the less has your education been very much neglected. We want some Sir Pertinax Mac Sycophant to teach surgeons how to "boo." Just imagine the absolute innocence of the man who, in sending a report in every respect directly counter to the wishes of those in authority, could pen the following:

"In submitting this Report to your inspection, I would, with great deference, trust that it will, in some degree, meet with your approbation; and hope that, in consideration of my services in the Niger, and in other parts of the world, added to my recent employment in the Cape de Verds, you will be pleased to recommend me to my Lords Commissioners of the Admiralty as deserving of promotion."

On reading the above, we confess we cannot tell whether we were most amused or grieved at such an exhibition of artless unconsciousness and *naiveté*.

To proceed with our narrative. Dr. King next appears upon the stage with his report. We are willing to believe Dr. King has acted conscientiously, but he is evidently a person with whom it is impossible to reason on the subject. He has made up his mind upon the non-existence of contagion, and no fact or argument can subsequently shake his opinions. The man who insists on a strict syllogism, or to be presented with an algebraic formula, in matters of medicine, ethics, or religion, may be considered as a hopeless subject. The strict disciple of definitions and demonstrations can never deal with the problems of probabilities. Where would be the use in asking Dr. King the chances for and against Boa Vista and the Eclair

ship being alone devastated by yellow fever, when the whole line of coast, the other islands, and all the other ships escaped, provided there was no connexion of cause and effect between disease in the ship and disease in the island? Equally vain would it be to inquire the probabilities, under the same conditions, of the disease appearing, for the first time within the memory of man, at Boa Vista, subsequent to the visit of the Eclair. If we ask what was the balance of chances that among the 4395 residents, inhabitants of Boa Vista, the few first attacked with a disease totally new to the island should be among those who had frequent communication with persons suffering under a similar disease in the fort Duke of Braganza, provided that that communication had nothing to say to the spread of the disease. Or if we asked, if the new disease proceeded from endemic causes, what was the balance of probabilities that the disease should chiefly prevail and be most fatal in those parts of the island least subject to the ordinary endemic remittent, and be mildest in those places where remittent is at other times generated?—Dr. King's answer to all these and similar questions would be the eternal negatives, "there is no absolute proof that the disease was ever communicated; and many persons exposed to contact with the sick escaped being attacked at the time."

We have, however, no quarrel with Dr. King; let every man, according to his lights, be convinced in his own mind. But what we object to is the system that has been pursued, of tampering with medical testimony, and of fishing for evidence. We think we have shown, in the preceding part of this article, that the question of contagion has nothing whatever to do with the continuance or discontinuance of quarantine. On the contrary, sure we are that the imperfect isolation of the sick at the fort Duke of Braganza, and the total neglect of proper ventilation and cleanliness, were the causes of the malignity and spread of the disease; and that if the sick had been distributed in airy houses, at a distance from each other, the consequences would have been in every instance similar to the particular case of Captain Estcourt, who died at the Consul's house, and was buried without any one getting the disease from him. But why should we be prevented from having recourse to judicious and enlightened sanitary measures, if we were even convinced that the disease was contagious? We suspect there is a miserable pusillanimity at the bottom of all this twaddle about contagion. The Board of Health are delighted to inform the public that cholera is not contagious. They next dilute down the oriental plague into

a variety of typhoid fever ; and then they draw distinctions between contagion and infection; and at last laud themselves in the belief that infection is nothing but bad ventilation and the poisonous products of putrefaction; and they substitute for facts and reasoning a metaphor about decomposing locusts in Ethiopia. They sit down to settle the whole question of contagion with the same complacency that a junior freshman works out, to his own satisfaction, the quadrature of the circle, or the doctrine of perpetual motion; and just as he smiles at the antiquated prejudices of the senior board, so do they (the Board of Health) most smirkly sneer at the mistakes and erroneous doctrines of the most learned and reflecting physicians. We will not say of them, as Grattan did of Flood, that they have a metaphor on their tongue and a bribe in their pocket; but we do say, that the course taken by the officials of modern times, with respect to questions of public health, has been calculated to corrupt the purity of medical testimony, and to engender the grossest charlatanism. Our readers will recollect that we had occasion, some time since, to expose the unblushing quackery which heralded "Ledoyen's disinfecting fluid." It will now be seen what it was gave origin and countenance to that gross humbug. The same causes have since elicited a host of competitors, and Sir William Burnett himself, notwithstanding our warning, has not thought it beneath his dignity to enter into this race. We shall say no more on this subject for the present, but we promise the various boards and heads of departments that we will vigilantly watch their proceedings, and never shrink from denouncing a policy which we believe to be most detrimental to the interests of medical science, because it is pursued in "high places."

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1. *Pathological and Practical Observations on Strictures, and some other Diseases of the Urinary Organs.* By Francis Rynd, Esq., A. M., M. R. I. A., &c. London, Longman and Co. 1849. 8vo. pp. 195.

2. *De l'Urétrotomie ou de quelques Procédés peu usités de traiter les Retrecissements de l'Uretre.* Par le Docteur Civiale. Avec une planche. A Paris, Bailliere. 1849. pp. 119.

It has been often a matter of astonishment to us, that notwithstanding the many opportunities afforded in the public hospitals of this city for the study of diseases of the urinary apparatus, so little should have appeared upon this most important class

of diseases, either in the form of lectures or as monographs, from the surgeons attached to these valuable institutions. It is true that the study of these affections has been cultivated in our city with no ordinary assiduity and care, and that, so far as their practice is concerned, our surgeons are in no respect behind the best and most successful practitioners in other countries. Still we must regret that the records of Irish surgery afford so few memorials of investigation in this particular department. There are none who have had the pleasure of attending the highly practical and instructive lectures delivered by the late Mr. Wilmot of this city, upon diseases of the urinary organs, but must regret that he has not given to the world a full and comprehensive detail of his experience upon this extensive subject; and this is the more to be regretted since few surgeons have obtained a more highly deserved reputation for the treatment of this most distressing class of maladies, than the late Professor of Surgery to the Royal College of Surgeons.

In the fifth and seventh volumes of our New Series will be found essays by that able surgeon upon "Strictures of the Urethra" and "Diseases of the Prostate Gland." These papers are throughout replete with all that sound practical instruction which so strongly characterised the professional discourses of Mr. Wilmot. It was his intention to have continued them.

Credit is certainly due to the author of the work at present under our consideration, for the industry he has exhibited in putting together in so useful a form the results of his experience. The work commences with some anatomical observations upon the urethra, and its liability to disease; the old point, as to whether gonorrhœa be the usual cause of stricture or not, next comes under consideration; and upon this subject the author expresses the opinion that "*probably it is not a cause of stricture.*" He observes, that

> "The membraneous portion of the urethra forms a curve under the firm and resisting ligament of the pubis, which curve will have a tendency to become an angle, according as the bladder becomes distended, and rises upwards in front of the abdomen; and the angle so formed will, by flattening and compressing the canal in its transverse direction, render the passage of the urine proportionably difficult through it. This over-distension of the bladder may occur in perfect health, even to the extent of producing retention of urine, and perhaps some of the cases attributed to loss of tone in the muscular fibres of the bladder might be as truly explained thus: but in the next place let it be supposed that from any cause Wilson's muscles should be seized with spasm in any of these cases already affected by the over-distension, and it must so shut up and close the urethra at that angle, as to occasion absolute retention. The patient,

then, in his efforts to relieve himself, will direct all the force of an excited bladder, aided by that of the abdominal muscles, on this very spot, already, probably, in a state of irritation, and disposed to become inflamed and thickened, and resisting; and let it be farther imagined that this should happen again and again, at every repetition the mischief will be increased until a permanent alteration of structure is finally induced."—pp. 11, 12.

In addition to over-distention of the bladder, and the increased curve in the urethra as its consequence, together with a spasm of Wilson's muscles, giving rise to stricture of the urethra, the author enumerates other causes of this disease; and amongst the rest he asserts, that

"Local weakness is a direct and powerful agent in the formation of a stricture; weakness from habitual intemperance, from long residence in a warm and enervating climate, from stimulating, unwholesome food, and, above and beyond all, from a forced and almost unnatural indulgence in sexual enjoyments. The influence of this latter exciting cause will scarcely be denied by men of practical experience, and possibly it may be regarded as one of the cases in which the transgressions of the parent are visited on the offspring; for there are strong grounds for entertaining the opinion that an hereditary tendency or disposition to the disease may be transmitted. It is true this latter supposition has not been prominently brought forward by the writers on the subject, and may, therefore, appear visionary, but, in the present instance, it has been suggested by observation; and if it be true that Hunter saw a case of stricture, complicated with fistula *in perinæ*, in a boy of only four years old, it is difficult to imagine how such an occurrence could be otherwise explained."—pp. 12, 13.

Mr. Hunter entertained strong doubts whether stricture ever proceeded from gonorrhœa, and indeed he instances this very case of the child of four years old, amongst others, as a confirmation of his peculiar views upon the subject. Our author has evidently revived this peculiar case for the same object, and introduces it amongst his arguments for maintaining the position with which he started, namely, that gonorrhœa, "*probably, is not a cause of stricture.*" In the absence of direct proof we are obliged to dissent from the speculations of our author; and we cannot help thinking, that if he admit the fact of a child four years old being affected with stricture, he might also admit the possibility of this child contracting gonorrhœal inflammation of the urethra from accidental contact with a diseased person—such cases are on record—and thus establish, in an ordinary way, the disease in question. We readily admit that there are other causes of strictures of the

urethra besides gonorrhœa. Every one knows there is such a thing as spasm of the muscular parietes of the membraneous portion of the canal. Gout may give rise to inflammation of the urethra, which may terminate in stricture; injuries of the perinæum, as from falls, &c., may produce like consequences; and we are all aware that the unskilful use of the catheter or bougie, or the administration of injections for the cure of gonorrhœa, may give rise to this disease. But, whilst we admit these facts, we still believe that gonorrhœa is the principal cause of stricture of the urethra. Sir E. Home maintained the same opinion. Sir B. Brodie believed that "a severe or long-continued attack of gonorrhœa" may be considered as a cause. Sir A. Cooper affirms his belief that "in ninety-nine cases out of every hundred it was the result of gonorrhœa," and again "of neglected gonorrhœa." Mr. Wilmot, in speaking of strictures of the urethra, asserts that "gonorrhœa is the most fertile source of this disease." Even Mr. Wilson, who appears to have entertained to a considerable extent the views of Hunter, admits that, "when a stricture is disposed to form, any inflammation happening in the urethra generally tends to increase the disposition"(*a*). And what inflammation, we would ask is, unfortunately, so common as that specific form of which we speak?

We would wish to give our author every credit for the kindness and charity of his nature, that charity which "thinketh no evil;" but we very much fear, in his enumeration of the causes of strictures, he attaches too much importance to the physical curvatures of his patient's urethra, and too little to his moral tortuosities; we wish we could think otherwise, but we feel reluctantly compelled to subscribe to the opinion of that truly eminent and practical observer of nature, the late Sir A. Cooper, and cannot avoid thinking, that by ninety-nine out of every hundred of our author's patients the compliment which he has paid to their morality has been but ill deserved. The author describes three principal forms of organic stricture:

"1. The simple circular, or, according to some practitioners, the packthread stricture (so called because it creates an appearance as if the portion of the urethra in which it is situated had been partially closed by a ligature of fine thread or twine), is thin, and apparently formed by a single duplicature of the mucous membrane; but this appearance is deceptive, for, on closer examination, it is found harder and firmer than it possibly could be consistently with the idea of so simple a mode of formation. Occasionally this stric-

(*a*) Wilson's Lectures on the Urinary Organs, p. 370.

ture is only partial, and occupies but a portion of the circumference of the canal, in which case but a minor degree of inconvenience ought to be experienced. The usual position of the packthread stricture is at the membraneous portion of the urethra.

"2. The banded or bridle stricture is when one or more firm and resisting cords or fibrils pass across the canal, leaving a passage for the urine at either side and between them. This must be of exceedingly unfrequent occurrence, for it is rare to meet a specimen amongst our pathological collections, and will probably be equally difficult of recognition during life. Its formation can only be explained by supposing that the urethra had been wounded or ulcerated, and an adhesion attempted between its opposite sides, which, yielding to the force of the stream of urine, became at length extended into a fibrilla or band. Accordingly, not originating in any pathological peculiarity of the urethra itself, it observes no particular locality, and may be found in any part of it. The few that have come under my observation were either situated at the bulb, or within an inch or two of the external orifice.

"3. The irregular stricture is where the wall of the urethra is converted into a hard substance, almost possessing the firmness of cartilage or ligament, for perhaps an inch or two of its longitudinal extent; the diameter of the canal being thus diminished, and its course turned in different directions. The quantity of surrounding hardness is not the same in every part, and consequently the canal is unequally diminished, and hence becomes so devious and winding as to render the guidance of an instrument through it very difficult, quite independent of the obstruction offered by the diminution of its size."

This form of stricture, or, as the author calls it, "an aggregation of strictures," "usually implicates the bulb in some one part or other of its extent," and may be attributed to "rough usage from instruments."—p. 16, &c.

The following observations upon some of the important sequelæ of stricture, together with the results of inflammation in the perinæum, are highly practical, and therefore deserving of attention:—

"Everything that can by possibility create a lesion of the urethra to a sufficient depth and extent to permit the escape of the urine from it, will probably give rise to abscess, and subsequently to fistula; and as wounds and lacerations, and other injuries, are generally inflicted on its inferior surface, where it is most exposed, and as the direction of the urine from that is towards the perinæum, there it is that urinary abscesses and fistulæ principally prevail. But abscess may appear in the perinæum without having any necessary connexion with the urethra, and therefore it is important to establish a pathological distinction between the urinary abscess, properly so called, and abscess arising from any other cause,—a distinction the

more essential, because the symptoms of both are nearly alike, even to the abominable urinary smell of the matter when discharged. Thus inflammation and suppuration may occur, from a variety of circumstances, in the perinæum, as well as in any other locality; and the contents of collections thus formed in the vicinity of mucous canals generally take their characteristic fœtor from that of the material the adjacent canal is designed to transmit; therefore the appearance of an abscess *in perinæo*, unattended by any previous urinary distress, by no means implies any more than perhaps a sympathetic connexion with the urethra, although, if neglected, or improperly treated, it may give rise to fistula by bursting into that canal. Thus, then, there are two distinct forms of abscess *in perinæo;* one in which the lesion of the urethra precedes the formation of the matter, and is the cause of it; the other in which the abscess occurs first, and opens the urethra by bursting into it; both terminate in fistula. The former of these is again divisible into two classes: one symptomatic, being the consequence of stricture or other disease; the other traumatic, wherein the urethra has sustained some injury or wound. It has been already stated that the urethra occasionally becomes distended into a pouch or bag immediately behind a stricture, which sac not unfrequently ulcerates, and allows the escape of urine into the perinæum; yet why this unfortunate occurrence should only take place in some cases, and not in all, is not easily determined, for all seem circumstanced pretty nearly alike: in all this sac must experience the full force of the contracting bladder, and sustain the pressure of the arrested fluid; in all some portion of the urine will be retained, and if it be the cause of the irritation, all should suffer in the same way, the only difference being in degree or intensity; and in all is there the same opportunity for the reception and lodgment of sabulous deposits or other accumulations; yet inflammation of the sac, which is the preliminary step, does not occur, in all else must stricture inevitably be followed by fistula *in perinæo.* By whatever cause occasioned, however, this sac may inflame and ulcerate or slough, giving an opportunity for the urine to escape, which it does either suddenly or in a gush, diffusing itself extensively throughout the perinæum, and occasioning a fearful destruction of parts, or else slowly making its way by degress, to the surface. In the former case the urethra has not been protected by deposition of lymph around it; or such deposit, having been formed, has been broken through by the impetus of the stream of urine, which thus without impediment reaches the cellular tissue, and passes in every direction through it; in the latter there has been a deposition of lymph, into and through which it makes its way, and by which it is circumscribed, until, having reached the surface, generally by a circuitous route, it occasions the formation of a small painful abscess, which bursts, and the fistula *in perinæo* is established. This is the usual course of events, and fortunate it is so, for the subjects of old strictures are ill calculated to bear the distress and danger attendant on an extensively diffused abscess, whilst the

bursting of the small one rather gives relief than otherwise, by providing a passage for the urine."—pp. 22, &c.

The experienced surgeon is well aware of the fact that the stricture itself is not always the only circumstance in the case demanding his serious consideration; in its early development, it is true, proper attention to it alone, and judicious management on the part of the patient and practitioner, may save the former from an accumulated load of misery, which he must ultimately endure from indiscretion or neglect; but in how many instances is the disease suffered to make progress until such structural alterations have taken place in other portions of the urinary apparatus, as frequently to deprive the patient of all benefit which, under other circumstances, would have accrued from the removal of the stricture. From a long-continued and neglected stricture, the urethra, behind the obstruction, becomes dilated into a sac or urinary depôt; this frequently ulcerates or bursts, giving rise to the terrible consequences which have been so well and so graphically described by our author. The bladder itself undergoes the most remarkable and serious alterations; the ureters too, and even the kidneys themselves, become deeply implicated in these changes; and thus has the foundation been laid for a most hopeless and helpless state of things from the want of a due appreciation of the dangers which may ensue from a neglected obstruction in the urethra. These pathological alterations have been long ago ably pointed out by Dr. Baillie and by Boyer; the former dwells particularly upon the amazing degree of thickening which the bladder undergoes, whilst the latter compares the appearance of its interior to the rough and columnar condition of the inside of the heart.

We shall quote our author's observations upon this subject:

"As the stricture increases the closure of the canal, the bladder, finding as it were that its ordinary contractions are not sufficiently powerful to expel the urine with the wonted facility, is obliged to augment its exertions, and the obstruction being permanent, or perhaps daily becoming more difficult to be overcome, these exertions can never know remission; hence its muscular coat becomes hypertrophied, and its walls so thickened, that the internal surface is columnar, and bears some faint resemblance to the musculi pectinati of the heart. The cavity of the bladder is thus actually diminished in its capacity, and of course feels the stimulus of distension more frequently than in its ordinary and healthy condition, and the necessity for emptying it occurs just in the same proportion. But, besides the physical change in the size of the bladder, there is probably a more important effect wrought on the sensibility of its lining membrane, which renders it more irritable and less able to endure the presence

of the urine; the calls are thus rendered not only more frequent but more urgent, and the quantity discharged at a time is often surprisingly small. This urgency is experienced in a far more troublesome degree during the night than in the day; not because of its greater frequency, although persons usually drink more in the evening, but because the attention is more directed to it in consequence of the disturbance and loss of sleep it occasions. When this pathological condition of parts is fairly established, a patient's life may be said to be truly miserable, for the mind exercises a decided influence on urinary affections, and whenever any difficulty is interposed to the free discharge of the urine when and where the patient pleases, he is certain to experience the desire, and to suffer great distress from being unable to comply with it. It is worthy of remark, that this thickened, columnar condition of the bladder, although a frequent consequence of stricture, is not universally so; in some severe cases the viscus has been found unaltered, and in a few its capacity was rather increased, and its walls rendered more thin. It must be confessed that this latter occurrence is difficult of explanation. Another very important alteration in the state of the bladder, in connexion with difficulty of passing the urine from any cause of obstruction, and, of course, from stricture, has reference to its own blood-vessels, and some others in its immediate neighbourhood, for in such case the veins on the anterior and inferior surface, those situate about its neck, and the prostatic veins, become enlarged, knotted, and varicose, capable of being injured, of pouring out a vast quantity of blood, the flow of which cannot be easily restrained. This condition of the bladder seems scarcely to have attracted the attention its importance deserves, as furnishing an explanation of some phenomena not otherwise very intelligible; why, for instance, large and fearful discharges of blood occasionally pass through the catheter, even although no perceptible violence had been employed; why hemorrhage into the bladder occurs in old persons after the use of an instrument; and, above all, why the operation of cutting into the bladder from the perinæum is so extremely perilous in such patients."—p. 30, &c.

The selections we have now given from Mr. Rynd's book are intended as specimens of his style and matter, and more for the purpose of inducing others to peruse his volume, than with the view of affording anything like a general analysis of it. The author has exhibited considerable industry and care in the arrangement of his work, and the practical precepts with which it is replete will amply remunerate the reader for the time expended in its study. We again repeat it as our deliberate opinion, that these " Pathological and Practical Observations on Stricture" reflect great credit upon the author.

The memoir of Civiale is the production of a surgeon matured in experience, who has long enjoyed in the French

capital an extensive practice in the treatment of diseases of the urino-genital apparatus, and whose former writings have already made him well and favourably known to the surgical world. That the author is a laborious and careful investigator is proved by his present work; and that he is an honest and fair-minded man is proved by the spirit in which his book is written.

In the introductory remarks the author informs us that the discovery of lithotrity was the *point de depart* of a true regeneration in the pathology of the urinary organs; that until then our ideas were but vague; and that many organic lesions were undiscoverable until after death, owing to the imperfect means of exploring them that we before possessed. In his present work he calls attention to a variety of stricture which is of so rebellious a nature that it requires a varied series of treatment; premising that we are not to expect any new discovery, but merely the better application of means long since known to the profession. In undertaking this task he considers it to be the duty of every surgeon to examine whether such and such means, advanced as an improvement, be so in reality. And although this may be a disagreeable task, inasmuch as it may awaken the angry feelings of an inventor, it should not be shrunk from.

The author begs us to remember that in the first volume of his *Traité pratique des Maladies des Organs Genito-urinaries* (1837 et 1842), and still later in the *Bulletin de Thérapeutique* (1844), he has presented some observations upon urethrotomy, and also upon the several means, both ancient and modern, by which it has been proposed to force strictures of the urethra. If his observations were then but brief, the facts were not sufficiently numerous to constitute an authority, the more especially as the majority of surgeons seemed inclined to oppose the practice, and he then rested contented with enforcing the caution with which this method should be received. He fears, moreover, that the manner in which he called attention to his own experience gave rise to the belief that he was prejudiced; his writings, he tells us, will prove the contrary, as he acted with respect to urethrotomy in the same manner as he acted towards rapid and forced dilatation, and towards the use of caustic, publishing the results of his practice, whether successful or unsuccessful.

Regarding urethrotomy, having tried scarification as a means of cure in undilatable stricture of the straight part of the urethra, his experience was not favourable to the practice. In so expressing himself he acted nowise contrary to experimental science; for when experience taught that long and deep inci-

sions were of benefit not only in strictures of the meatus, but also in the straight and curved part of the urethra, he immediately avowed it; and at present, in giving his convictions to his professional brethren, he wished not to fetter their opinions, his only desire being to make them acquainted with the foundations upon which they were rested. In the present memoir he has told them what was favourable and what was dubious, and to the latter he wishes principally to call their attention.

The work is divided into two parts. In the first is given the history of the cutting from without inwards into the urethra, or the operation of dividing the urethra through the perinæum. Dr. Civiale seems not a little jealous that this mode of operating has been attributed by some modern continental writers, but more especially by the English, to John Hunter; this operation having been alluded to by Rhazes, and described by Avicenna as common in his time. He describes the different modes of performing it, and gives the opinions of various surgeons, both French and others, concerning the difficulties likely to be encountered, and concludes this part with several judicious remarks on the cases in which it may be advantageously practised. In the seventh Number of our present Series we have published a paper on urinary fistula, by Mr. Colles, in which he admirably points out the difficulties that may be encountered in urethrotomy from without inwards.

In the second part of the work is given a sketch of the history of urethrotomy, as performed from within outwards. The different instruments which have, from time to time, been employed, and their several modes of application, are discussed. And here we find the peculiarity of the author's treatment, which consists in dividing the stricture from behind forwards, this being accomplished by first having partially dilated the stricture, so as to allow an instrument consisting of a straight stem, whose point is larger and olive-shaped, to pass through it. On withdrawing the instrument, the cutting part which till then remained concealed, is made to protrude, and so the stricture is divided; the operator being enabled, by means of the mechanism of the instrument, to make the incision of any length or depth he may consider advisable.

The author's experience of this mode of operating leads him to the following conclusions:

First.—That urethrotomy from behind forwards, and from within outwards, is an improvement in surgery.

Second.—That beyond doubt it is preferable to all other means.

Third.—That in long, callous, and retractile strictures, occupying either the straight or curved part of the urethra, long and deep incisions, properly performed, permit of dilatation, and produce results not to be obtained by any other method.

Fourth.—That in following this mode of treating stricture, and observing the necessary precautions, the operation may be performed without danger, or without even exposing the patient to any serious accident.

Fifth.—That the division of the stricture from before backwards, and without any guide, is dangerous, and recourse should not be had to it unless in some rare cases, and only as a means of removing the first obstacles, so as to facilitate the employment of other methods.

In conclusion, he observes, that he does not wish to exalt urethrotomy into a general means of treating stricture of the urethra; as in so doing he would err in estimating its real value, lead others astray, and cause surgery to make a retrograde step, an evil which it is hoped may not occur when all other sciences are on the advance.

We cannot at present enter into a thorough analysis and critical examination of this memoir, which we can with confidence recommend as presenting a clear and simple statement of the actual state of knowledge on the subject.

Lectures on the Causes and Treatment of Ulcers of the Lower Extremity. By GEORGE CRITCHETT, Esq., F. R. C. S., &c. &c. 1849. 8vo. pp. 121.

IN our last Number we furnished our readers with a review of Mr. Chapman's work on ulcers of the lower extremity, in which the advantages obtained by water-dressing, together with proper support, were pointed out; and we then recorded our own experience on the subject, as being in favour of Mr. Chapman's mode of cure. Nothing can exemplify the importance of the treatment of ulcers of the lower extremity more than the number of works which have lately issued from the Press on the subject.

Mr. Critchett's lectures were delivered at the London Hospital during the summer of 1848, and are now brought out in the present form, dedicated to the pupils of that Institution. They are six in number. The first embraces the causes, classification, and general treatment of ulcers. In it the author proposes to divide all ulcers into simple or local, specific or

constitutional, subdividing the simple or local into acute or spreading, subacute, chronic, healthy, irritable, and varicose. The specific or constitutional come under the various heads of strumous, syphilitic, phagedenic, periosteal, menstrual, œdematous, and malignant.

"Each of these classes of ulcer has certain characters and symptoms by which it may be recognised, and requires for its successful treatment certain modifications of local and constitutional appliances; and as in medicine and surgery generally, so especially in the particular form of the disease we are now considering, your success in curing will not depend so much on the multiplicity of your remedies, as upon your power of recognising the exact form of the ulcer with which you have to deal, and the plan most suitable to that particular case."

In considering the principles on which the treatment of ulcers of the legs is to be conducted, the following observations are made:

"I must again remind you that the reason why ulcers are more frequently found in the lower extremities than in any other part of the body, are more difficult to heal, and are more liable to recur in this situation, is on account of the weight of the superincumbent column of blood weakening the vessels and impeding the circulation through the part. The truth of this will, I imagine, be admitted by all surgeons, though it has not, I think, been sufficiently clearly and forcibly insisted upon by writers on this subject."

Had Mr. Critchett taken the trouble of looking into the chapter on the sources of intractability of ulcers of the lower extremity, in Mr. Chapman's work before alluded to, he would have found this difficulty in healing ulcers of the leg clearly and forcibly insisted on. Mr. Critchett continues:

"It follows as a necessary consequence that the chief aim and object, independent of any specific treatment that the case may require, is to place the circulation on a par with the rest of the body. This object being once accomplished, there is no reason why ulcers so situated should not heal as readily and as quickly as in any other region. The next important question is, how is this desirable result to be accomplished? The answer which at once suggests itself to the mind is, remove the weight of the column of blood by the recumbent position."

The author shows the disadvantages which accompany and follow the treatment by confinement to the recumbent position, and asks:

"Is there no other way besides rest in which the circulation in

the lower extremities can be brought to a par with the rest of the body? I reply, with a confidence based upon extensive personal experience, and upon extensive observation of the same practice in other hands, that there is a plan more rapid, more certain, and far more lasting, and more applicable to a large majority of these cases, than rest, and even useful in some cases where rest fails; and that is, *uniform and complete support to the entire limb, which I maintain cannot be obtained by the ordinary bandage, however skilfully applied, but is only to be efficiently accomplished by a proper application of strapping, so as completely to envelope the limb from the toes to the knee.*"

We now proceed to the second chapter, which contains the chief feature of the book, viz., Mr. Critchett's description of the method by which he employs compression in ulcers of the leg, its modifications in certain cases, and the particulars in which it differs from the plans recommended by preceding authorities on the subject.

"I stated in my former lecture that one main object to be obtained was to facilitate the return of blood through the limb, so as to place the circulation in this part on a par with the rest of the body. Now I maintain most strongly and confidently, both from reasoning on the matter and observation, that Mr. Baynton's plan, so far from accomplishing this object, has a decided and direct tendency to impede the circulation through the limb, and, like a tight garter, produce stagnation, with its train of evils; hence these cautions about strangulation, sloughing, &c., which I have just quoted; and even if it produce benefit in some few cases to the dilated capillaries immediately around the wound, this advantage must usually be more than counterbalanced by the injurious effect upon the rest of the limb. Perhaps it may be argued that the bandage applied so as to cover the entire leg is sufficient to counteract this evil tendency of the circular strips; but I contend that the most perfectly and accurately applied bandage affords but irregular and imperfect support to weak vessels, even when used alone; and when called upon to counteract the strangulating tendency of Mr. Baynton's tight circular adhesive band, it is wholly unequal to the task, and leaves the limb in a most unsatisfactory condition for the healing of a wound. It may be thought that I am insisting with unnecessary minuteness and vehemence upon this matter, and that the plan I am about to propose differs but little from Mr. Baynton's; but I contend that there exists all the difference between a correct and false principle, between a safe, efficient, and widely applicable mode of practice, and one that is at best very limited, doubtful in its results, and dangerous in its tendency.

"I will now proceed to explain to you, in detail, the method I recommend you to adopt, in order to accomplish a complete support to the entire limb. You must seat your patient opposite to you, and support his foot upon a small stool, about a foot and a half high,

and so constructed as to receive the point of the heel, and leave the rest of the foot free. You should be provided with strips of plaster about two inches in width, and varying in length from twelve to eighteen inches, according to the size of the limb. The best material for the purpose is the simple emplast. plumbi of the Pharmacopœia, spread upon soft, unglazed calico, and free from resin, which is often introduced to increase its adhesiveness, but which is very liable to irritate the skin. If the plaster be well made, and of the best materials, it will adhere perfectly. I have often found it unmoved for many weeks, and even months. It is convenient to provide yourself with a metallic warmer, made with a flat top, upon which you can lay three or four pieces, heated either by hot water or small lamps, which are better, if you require it for any length of time. But to proceed. You then take the centre of the first piece, and apply it low down to the back of the heel, and then, with the flat part of both hands, press the plaster along both sides of the foot. This plan is very preferable to taking hold of the ends, in endeavouring to apply them, as it insures a perfectly smooth adaptation of the plaster to the part, and also because it enables you to regulate that very important point, the amount of tightness you may wish to employ. As you proceed with the remainder, you must always remember the principle is to make one portion hold on another; you must, therefore, alternate them round the foot and ankle. Your second piece should be placed in a similar manner underneath the heel, and then carried upwards at a right angle to the last, so as to cover a portion of each malleolus. The third piece should be again applied to the back of the heel, overlapping the first by about one-third; the fourth under the foot, and carried upwards, each piece being pushed along so as to allow it to take its own course. This must be continued until the foot and ankle are covered; the strips must then be carried in a similar manner up the leg, increasing in length as the calf increases, and extending as far as the knee, and in some few cases above this. A calico bandage, about three inches in width, and eight yards in length, varying, however, according to the size of the limb, must now be applied in the following manner:—if it is the right leg, the bandage should be held in the right hand in commencing, and *vice versâ;* this is in order to bring the folds which are necessary as you ascend the leg on the flat part of the tibia. The first turn should be made round the ankle; the second round the foot, near the toes; the third round the lower part of the ankle, near to the os calcis; the next round the foot, overlapping the second about one-half; the fourth round the ankle so as to cover the loose upper end of the fold that passes round the back part of the os calcis; the fifth round the foot; and now you begin to ascend in spiral folds, each overlapping the last rather more than half. As the limb enlarges it is necessary to give a turn to each fold of the bandage; this is done by placing the thumb of one hand on the spot where you desire to limit the extent of the fold, and give a peculiar sweep of the other, in which the bandage is held, so as to leave the bandage

perfectly smooth. But it sometimes happens, particularly in small ulcers situated in the hollow between the maleolus and os calcis, that the diseased vessels immediately around the wound require an amount of pressure which the rest of the limb would not bear. Under these circumstances, very great advantage is derived from applying, previous to the support I have just described, some pieces of strapping about six inches in length, and two inches in width, in a concise manner, over the wound, so as to extend a few inches above and below it. These pieces, as they do not encircle the limb, may be applied with all the force and tightness the surgeon can exert. If this plan be superadded to the other in certain cases, it is of great assistance to the surgeon, enabling him to combine considerable local pressure upon the weakened and distended vessels immediately surrounding the sore, with gentle mechanical support to the entire limb. But, it may be asked, is this complete support of the entire limb always necessary? I answer, certainly not: when the limb is in an otherwise healthy state, the congestion confined to the circumference of the ulcer, and the ulcer is situated tolerably high up the limb, short strips, applied so as to cover a few inches above and below the wound, will answer every purpose; but it is of the utmost importance that these pieces should not surround the entire limb, for reasons that I have before insisted on; and I would lay it down as a rule without an exception, that, in every case in which it is necessary to apply the strapping entirely round a limb, it must never be partially applied, but must encompass and support every part of the leg."

There is nothing novel in the foregoing modification of Baynton's method of strapping; the plan of not entirely encircling the limb with the adhesive strips having been adopted in many of our hospitals for years past.

Mr. Critchett commences the treatment of a simple chronic ulcer of the leg with strapping alone; if, however, it does not progress favourably, if it is irritable or indolent, or the edges look ragged and uneven, he applies, previously to strapping, some stimulating application, either a solution of nitrate of silver, red precipitate, or black wash, or any other application of the same kind that is in common use.

In the third lecture we find a very good account of the acute and subacute ulcer, with the mode of treatment to be adopted; the value of water dressing in the chronic ulcer; and a short description of the plans of treatment recommended by Messrs. Skey, Spendor, and Syme.

"The acute form of ulcer is almost invariably attended with severe suffering, which is aggravated to an intolerable degree when the limb is placed in a depending position. There is a sensation of great heat and tension, and the pain is of an aching, gnawing cha-

racter; the ulcer looks uneven and glassy, the edges are irregular and undefined; sloughs varying in size are often seen on the surfaces; the discharge may be slight or abundant, but it is invariably thin and ichorous; the surrounding parts are of a bright red colour, or sometimes of a peculiarly specky red and white aspect, difficult to convey in words, but very characteristic of this condition: the swelling may be slight, or it may extend over a considerable portion of the limb. On making continued and firm pressure upon the parts in the neighbourhood of this sore they pit, showing a local œdema, which I have invariably found to exist in acute ulceration of the lower limb, and which is very rarely found in subacute or chronic stages, except when there is general anasarca. Any attempt to apply mechanical support during the acute stages of ulceration is invariably attended with injurious effects."

Here Mr. Critchett uses rest, soothing applications, water dressings, &c., and thus speaks of Mr. Chapman's mode of treatment:

"What then is the treatment to be adopted in those subacute ulcers? If the skin remains of a bright red colour, rest must still be enjoined, and it is owing to the extreme difficulty in inducing your patient to submit to this entire rest for a sufficient time that this subacute stage is often prolonged. Strips of linen may be dipped in cold water, and applied so as to give a little support in the same way as in the strapping, and over this strips of oiled silk is a useful plan in the early stage. I have used this method on several occasions, when the inflammation was too acute to bear strapping, and with very marked benefit. It was first suggested to me by my friend and colleague, Mr. Katward, sometime before Mr. Chapman's work on ulcers appeared. I have a high opinion of the plan, but I cannot accord to it all the merit claimed for it by Mr. Chapman. In my experience it has almost invariably happened that, after a certain amount of advantage, a stage arrived when no progress was made, and I have been compelled to have recourse to my usual method to complete the cure. Much has been said and written within the last few years on the subject of 'water dressing' for wounds. I have tried it extensively; it has the advantage of cleanliness, economy, and simplicity, and is certainly an immense improvement upon the complicated unguent of former days; but it is desirable, if possible, to get at its real value. It answers remarkably well in the transition stage from the subacute to the chronic ulcer, but there comes a time when the surface of the sore is either raised and flabby, as in cases where it is combined with entire rest, or becomes dry, and makes no progress towards healing; in either case it has done its work, and some other application must be substituted. I can scarcely recall a single case of any importance, out of many in which I have fully tried this remedy, that I have been able to bring to a successful termination by this application alone."

The fourth chapter is occupied with the treatment of chronic ulcers, the peculiarities which prevent success; the healthy ulcer; and the distinguishing character of the irritable ulcer. In it the author says:

"I will now proceed to inquire what are the circumstances and complications likely to interfere with the success of this plan (treatment by strapping), either retarding the cure, or entirely preventing it. If you meet with a case in which the sore has spread to a very considerable extent, encircling, or nearly encircling the limb, or occupying a very large portion of the lower and back part of the leg, attended, as it usually is with profuse watery discharge, it is very doubtful whether you will be able to effect any permanent good, even by the most judicious employment of mechanical support. Another circumstance that interferes with this mode of treatment is a very irritable skin; most frequently this depends upon the strapping not being pure, and containing resin, rancid oil, or some other irritating ingredient; but occasionally it happens, that when the best plaster is used, the skin becomes so red and inflamed, and even covered with pustules, that you are compelled to abandon it."

In the fifth lecture we have an excellent description of the varicose ulcer, its treatment; specific ulcers, strumous ulcers, phagedenic ulcers, and the different modes of treatment proposed. Whilst considering the subject of varicose veins, and the different modes of treatment proposed, the following observations are made:

"I would only remark, that according to my own somewhat limited observations of cases that have been thus treated, and from what I have gathered from writings on the subject, it seems to me that every plan yet devised is open to two rather serious objections:—viz., first, the obliteration of the vein is attended with difficulty, pain, and even with danger; and secondly, even when accomplished, the smaller veins have become so extensively implicated that in general no real and permanent advantage is gained. The question then naturally arises, is there any safe and certain method of curing this very troublesome and painful class of ulcer? In reply, I state with confidence that experience has shown me that if there is one form of sore more than another, over which strapping, when properly applied, achieves a signal triumph, it is that I am now considering."

The sixth and concluding lecture embraces the treatment of specific ulcers, periosteal, menstrual, œdematous, and malignant ulcers; and is terminated with an inquiry into the propriety of healing up old ulcers of the leg, on which latter subject Mr. Critchett states that, with two exceptions, he cannot call to recollection a single case in which bad constitutional re-

sults followed the healing up of an ulcer; while, on the other hand, he could cite many cases where the removal of a constant source of annoyance and irritation contributed materially to the improvement of the general health.

Having given an impartial trial to the plans of treatment recommended by both Mr. Chapman and Mr. Critchett, our opinion of their relative value may be interesting to the reader. We have adopted Mr. Chapman's plan of treating chronic ulcers of the leg extensively, both in hospital and private practice, and we have seen it used by others; and we have much satisfaction in stating, that in the generality of cases we succeeded in accomplishing with it a rapid and inexpensive cure. When using it we have had recourse at times to the employment of nitrate of silver, solutions of various astringents, chloride of lime, &c., so as to meet the exigencies of each case; the compresses of lint used in the water dressing being dipped into the solution and used in the same manner as in the cold water dressing: but to the equable support of the limb, as recommended by Mr. Chapman, we consider the rapidity and permanency of the cure principally due. Our experience in this respect differs widely from Mr. Critchett's, as may be inferred from that gentleman's remarks on the water dressing which we have quoted. Since Mr. Critchett's work reached us, we have taken every opportunity of testing the value of his plan of treatment, and we have found it to prove highly beneficial in chronic ulcers of the leg accompanied by a varicose state of the veins, and also in varicose legs unaccompanied by ulceration. In some of these cases the patients expressed themselves as having derived more comfort and support from this mode of treatment than from any other before tried with them; in fact it forms a very efficient substitute for a laced stocking. We found in some cases of varicose legs, that, after a few applications, the strapping could be left on for a fortnight or three weeks, the linen roller being occasionally renewed, during which time the patient experienced great relief, and was enabled to go about his business on foot, which must be considered a great advantage, especially amongst the working classes. On the other hand, we have in some cases found that the application of the strapping was followed by inflammation and eruptions on the skin, which occasioned much annoyance to both patient and surgeon. This unfortunately occurred in the person of an old gentleman, the first case in which we used the strapping; and as we took the precaution of obtaining the plaster as free as possible from resin, and as there was nothing about the integuments to justify us in anticipating such a result, we

wish to put our readers on their guard, for in the case alluded to the cure was considerably retarded by this unpleasant event. In no case treated by us on Mr. Chapman's plan did the slightest cutaneous irritation or inflammation ensue; and of his method of treatment we entertain the highest opinion, on account of its cleanliness, facility of application, economy, and soothing support. At the same time we consider Mr. Critchett's plan of strapping from the toes to the knee of great service in the varicose leg, with or without ulceration; a great deal of its success, however, will depend on the proper adjustment of the strapping, the purity of the plaster, and a healthy state of the skin. We strongly recommend the perusal of Mr. Critchett's work to our readers.

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1. *An Introduction to Botany.* By JOHN LINDLEY, Ph. D., F.R.S., Professor of Botany in University College, London, &c. Fourth edition, with Corrections and numerous Additions. 2 vols. 8vo. London, Longman and Co. pp. 406 and 427.

2. *The Elements of Botany.* By ADRIEN DE JUSSIEU, Membre de l'Institut, Professeur au Muséum d'Histoire Naturelle, &c. Translated by JAMES HEWETSON WILSON, F. L. S., F.R.B.S., &c. London, John Van Voorst. pp. 755.

AGAIN is Dr. Lindley before us,—the indefatigable Lindley, with all that mass of accumulated information by which almost every one of his works is characterized, and which must give to that of the present notice a rank pre-eminently high among introductions to botanical science.

To call the present book a new edition of the Introduction to Botany, must, however, convey a very imperfect notion of its nature; it is in reality altogether another work. Since the publication of the third edition in 1839, structural and physiological botany have advanced with a rapidity with which few sciences can show any parallel; recent improvements have rendered the microscope a totally new instrument, by which the investigator of organic being has become endowed with a power far beyond anything which the most successful observers of a very few years ago could lay claim to; while every additional fact revealed by its aid becomes a step to some further discovery, and gives a fresh impulse to the accelerated progress of science. From all quarters of the civilized world new matter is rapidly accumulating; Europe, amid her revolu-

tions, her disorganized society and subverted thrones,—utilitarian, wealth-loving England,—the peaceful savannahs of America,—and the blood-stained ravines of India, have all contributed to the vast influx of phytological truths, which even at this moment are pressing in, thick and fast, upon us.

To no ordinary intellect may be intrusted the task of grasping and arranging the accumulated observations and disconnected theories of such distant regions, and of such different minds; and with perfect sincerity do we say, that this task has been performed, in the work before us, with an ability and a success which could hardly have been anticipated, while there has thus been placed in the hands of the student a complete cyclopædia of structural and physiological botany. It is not, we believe, exactly in this department of the science that the originality of our author's own views is mainly to be looked for; and though the present work is by no means destitute of original matter, we yet conceive its chief merit to consist in bringing together the vast multitude of results which have sprung from phytological research throughout the world, so as to present us with a complete exposition of the present state of the science, while every fact and every theory is with the most scrupulous exactness referred to its proper author.

With all the merits, however, of this excellent work, there is one defect which we cannot help viewing as seriously interfering with its utility. We allude to the deficiency of figures, for, though it contains six copperplates and numerous wood-cuts, these are merely reproduced from the old editions, and, therefore, only illustrate the state of science as it presented itself more than ten years ago; and while in the present edition the matter is nearly doubled, not a single new figure appears to us to have been introduced; a circumstance the more to be wondered at when we reflect that every day is increasing our facility of scientific illustration, and when we call to mind the profusion of wood-cuts which adorn the pages of Dr. Lindley's other excellent publications. We cannot indeed see why the very blocks which furnished the beautiful illustrations for the last edition of our author's Elements of Botany, might not have been employed in giving additional utility and attractiveness to the Introduction.

The Elements of Botany by Adrien de Jussieu, do no discredit to the illustrious name inherited by their author. Lucid and perspicuous in style, full in matter, clear and utterly free from all confusion in arrangement, replete with philosophical thoughts, and in addition to all this, copiously illustrated with admirable wood-cuts,—the Elements of Botany have

acquired on the Continent a reputation in which it is seldom the lot of scientific works to obtain; and we heartily rejoice at seeing them now laid before the English student in an English dress.

Mr. Wilson shows himself to have been in every respect competent for the task of translation, and indeed the work has even improved under its new garb. An admirable introduction from the Cours de Zoologie of M. Milne Edwards, is prefixed; while the addition of an Appendix, with figures of the most important forms of fossil vegetation, and with descriptions, by the translator, of the principal geological formations, increases still further the value of the work. Indeed we hesitate not to consider it as one of the most important acquisitions for the English student.

A Practical Treatise on Morbus Coxarius or Hip-Joint Disease, &c. By W. C. HUGMAN, M. R. C. S., &c. London, Highly. 1849. pp. 81, plates.

IN the symptoms and pathology of hip-joint disease there is nothing new in Mr. Hugman's little work. The account of the symptoms is concise, and no attempt is made to distinguish the disease as commencing with inflammation of the synovial membrane, with ulceration of the cartilages, or with scrofulous disease of the bones. Yet such a distinction does really exist in this as in every other joint; and the practical surgeon can tell, from the local signs, from the age of the patient, the predisposition to rheumatic affections, &c., the true origin of the mischief. Nor is it unimportant to do this early, as the prognosis is very different in synovitis of the hip-joint from what it is in ulceration of the cartilages or in the disease commencing in the bones: treatment very successful in the first is often unsuccessful in the two last.

The summary of the pathology is good; and the author seems to have taken much pains in examining numerous preparations in the different museums, as a result of which he gives a very true, though rather meagre description of the morbid changes. He also makes a slight confusion between the morbus coxæ senilis, with its hard, ivory, bony degeneration, and the disease in children or the young.

Mr. Hugman very properly denies the truth of the opinion, at one time so generally held, that shortening with deformity depended on dislocation of the head of the femur from its socket, on the dorsum ilii. Shortening from this cause is by no means

so frequent as it is from partial destruction of the head of the femur, enlargement of the acetabulum, or yielding of its upper edge.

The main object of Mr. Hugman's book, and for which it is really worth perusal, is to recommend the adoption of a new method of enforcing absolute rest of the limb, by the patient being kept in the prone position, in the same way as first recommended by Mr. Verral for curvatures of the spine.

With regard to the question of absolute rest, there is some difference of opinion among surgeons, though the majority are, we believe, in favour of it. When there is much pain in the hip, aggravated by the least motion of the limb, there can be no question of the necessity of perfect rest, and that in bed is the best; nor is there any fear of the patient stirring, as the increase of pain by motion is a sufficient check; but when, after proper treatment, the violence of the pain has diminished, and is not severe enough to prevent him tossing about in bed, or if, when quiet, he lies on the sound side, with the affected limb bent up, and the body twisted over, making a curve in the spine, mere lying in bed will not do good enough to the limb to counterbalance the injury inflicted on the general health by want of air and exercise; therefore we allow the patient to go about lying at full length in hand carriages with easy springs, or, fixing the limb by properly adapted splints and bandages, allow him to go about on crutches.

Mr. Hugman is an advocate for absolute rest, which, in the manner he enforces it, he says is quite innoxious to the general system. We must refer to his work for an account of his method, as the plates materially assist the description. The drawings of his peculiar mechanical contrivances are good, those of the nude figure are exceedingly bad.

In summing up our views of Mr. Hugman's book, we must say that the symptomatology and pathology have been better done by others. The article by Mr. Adams, for instance, in Todd's Cyclopædia, on the Morbid Anatomy of the Hip-Joint, leaves little to be desired on this head. In the treatment, too, no mention is made of mercury, the efficacy of which has been so firmly established by Dr. O'Beirne; but, as recommending a novel mode of enforcing rest of the limb, we think Mr. Hugman is worthy of commendation. In some cases Physick's closely fitting hip-splints may be most eligible, in others Bennet's large and rather cumbrous apparatus; while in many cases, in the early stage, the surgeon would do well to try the plan of Mr. Hugman.

PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

REPORT

ON THE PLAGUE OF MILAN IN 1630.

Translated and abridged from the Italian of Manzoni.

By M. DONOVAN.

For some years previous to the breaking out of the plague in 1630, Italy had been oppressed by a series of misfortunes. Contending armies desolated it, each in their turn; while the state of misrule, caused by a continued war, left the inhabitants unprotected by the laws, and at the mercy of a few individuals whose riches and powerful family connexions enabled them to commit the most lawless acts with impunity; added to these depressing causes, the failure of the crops for three or four successive years had produced a dreadful amount of misery: particularly in Milan, where the people, driven to despair by famine, had risen in a body, and had broken into the bakers' shops, destroying the ovens, and thus increasing the evil.

Towards the December of the preceding year the general misery arrived at its height, especially in the city of Milan, where the peasants came in crowds for relief. At this time the streets of Milan presented a truly wretched spectacle. Besides the usual number of professed beggars, crowds of boys dismissed by shopkeepers, nay, the shopkeepers themselves, dismissed servants, and entire families from the surrounding country, wandered about without clothes, food, or shelter, contending with each other for the alms of the passengers. Famine, desolation, and death, everywhere met the eye. Ripamonti relates the case of a woman whose corpse was found in one of the streets of Milan; her mouth contained a quantity of half-chewed grass with which she had endeavoured to appease the pangs of hunger; and, as he expresses it, her lips still seemed in the act of that maddened effort to sustain life.

The mortality at this period, although great, was for some time unperceived, as the void occasioned by it was constantly filled up by the concourse of people from the districts around.

So passed the winter and the spring, and even at this time the Tribunal of Health continually represented to the Provisional Tribunal the danger of contagion which threatened the city, so crowded with misery, and proposed that the beggars should be collected into various hospitals. During the delay occasioned by the discussion of this proposal, and of the ways and means for carrying it into effect, the number of corpses accumulated daily in the streets, and the general amount of wretchedness increased. Finally, a new expedient was devised in the Provisional Tribunal, as being more easy and expeditious, which was, to collect all the beggars, healthy or otherwise, into one place in the lazaretto, there to be maintained at the public expense; and this proposal was resolved on in direct opposition to the opinion of the Sanità(*a*), who vainly argued that it would but increase the danger.

The lazaretto of Milan, which still exists much in the same state as then, was a square enclosure outside the city, divided into small rooms, on one story, to the number of 288. This lazaretto, begun in 1489, had been founded by private bequests, and had been since kept up at the public expense. It was built, as its name implies, as a shelter for persons sick of the plague, which, in those times, frequently raged eight times in the course of a century. At the period, however, at which we speak, the lazaretto was only used as a place of storage for confiscated contraband goods.

Immediately after the decision of the Provisional Tribunal, preparations were made for its conversion once more into a lazaretto. The goods were withdrawn, the rooms strewn with straw, stores of provisions laid in, and the beggars invited by public edict to its shelter. But although, during the first few days, a great number flocked to it, after some time it was found that many causes prevented them from voluntarily accepting the asylum.

The Provisional Tribunal were now obliged to resort to force, and officers (*birri*) were sent round the city, with orders to force the beggars to the lazaretto, and to bring those tied who resisted. For each beggar brought to the lazaretto the officer received the sum of ten pence; and this system worked so well that in a short time 10,000 were collected within its walls.

Although excellent regulations existed for the maintenance of order, they were badly carried into effect. For instance, the inmates, to the number of thirty, slept in each small room, some on putrid straw, and some on the bare ground. It had been directed that the bread should be of good quality; but instead of this it is said by the records of the time that it was adulterated with various heavy substances which were not nutritious. To add to the sufferings of these unfortunate persons, thus forced into the lazaretto, there was a scarcity of pure and salubrious water, the only kind with which they were supplied being that of the ditch surrounding the building.

(*a*) Tribunal of Health.

To these numerous causes of mortality was added a singularly unfavourable season, a long-continued rain being succeeded by an equally long-continued drought. These evils, acting in conjunction with the irritation occasioned by imprisonment, grief for the dead, regret for the absent, and the apprehension and constant spectacle of death, caused such an increase of mortality, that many even at this stage gave the disease the name of pestilence.

The Provisional Tribunal now began to discover the bad effects of their obstinate opposition to the Sanità, and too late endeavoured to repair their error. The doors of the lazaretto were thrown open, the beggars who still continued healthy were allowed to depart, and the sick were conveyed to the hospital of Santa Maria della Stella, where the greater number died.

Meanwhile the harvest began to approach; the beggars from the surrounding districts left Milan, and returned to their respective countries to prepare for reaping; and the good Cardinal Federigo Borromeo, remarkable for his many acts of benevolence during this and the preceding years of distress, caused a giulio(*a*) and a reaping-hook to be given to every peasant who presented himself at his residence. With this harvest ended the famine, and the mortality continued to diminish until the end of autumn, when a new scourge brought a renewal of disease.

From various political causes, unnecessary to mention, the Emperor Ferdinand of Germany judged it expedient to send a body of German troops through the Milanese, to undertake the siege of Mantua. As it was a well-known fact, and had been mentioned so far back as a century before by Varchi, that the plague constantly lurked amongst the German soldiers, the Tribunal of the Sanità deputed Dr. Tadino, as he himself relates, to represent to the Governor, Don Gonzalo, the frightful peril which the country would incur if this army were allowed to pass. The answer of the Governor is perhaps, of all his actions, the one most worthy of being recorded; he replied, that he did not know what to do; that the motives which occasioned the movement of the troops were of greater import than obviating the danger represented; that they must do their best to remedy the evil, and trust in Providence.

The two physicians of the Sanità, Tadino and the senator Settala, proposed in the Tribunal, that all persons should be forbidden, under the severest penalties, from buying goods of any kind from the soldiers. But it was impossible to make the President understand the necessity of such a regulation. "He was," says Tadino, "a man of great goodness of heart, but could not believe that the death of so many thousands could be the consequence of commerce with these soldiers or their goods."

The month of September was the time fixed for the departure of the German troops, and accordingly about that time the first detachment of them passed through Milan, on their way to

(*a*) About six-pence sterling.

Mantua, under the command of Rambaldo de Coltalto. On their approach the chief part of the inhabitants fled to the mountains; a few remained, however, either for the purpose of watching over some sick person, or of keeping within view their valuables, which many had concealed. However, all their stratagems were of no avail, for the soldiers, a most undisciplined body, well versed in acts of rapine, searched every corner of the houses, burned the furniture as wood, and forced its owners by torture to reveal where their treasures were concealed. Matters became worse as each successive squadron arrived. As every available commodity had been already carried away, they revenged themselves on the wretched inhabitants by ill treatment; burned the doors of the houses, and in some cases the houses themselves; and, finally, after a sojourn of twenty days, departed, leaving the villages through which they passed almost uninhabitable.

Throughout the whole stripe of country through which the army had marched, corpses were found, some in the houses and some in the streets. Shortly after, in different parts of the country, persons, nay, even whole families, were taken ill with strange and violent disorders, which carried off many, and presented symptoms unknown to the greater number of the survivors. But the proto-physician, Ludovico Settala, who had seen the disease called the plague of "San Carlo," fifty-three years before, and had been one of the physicians most reputed for its cure, attentively studied the symptoms of the new disease, and on the 20th of October, 1630, reported to the Tribunal of the Sanità, that the plague had undoubtedly broken out in the territory of Chuso. Of this report we know, on the authority of Tadino, that no notice was taken. Similar reports were soon after made from Lecco and Bellano. The Provisional Tribunal now determined to send a commissioner and a physician to visit the places mentioned.

They arrived there; but, according to Tadino's account, seem to have been very careless in their investigations. He says, "they allowed themselves to be persuaded by an old and ignorant barber, that this disease was not plague, but partly the effect of the autumnal exhalations from the marshes, and partly the effect of the sufferings caused by the passing of the German troops." This assurance was reported to the Sanità, and with it they appear to have been contented for some time.

Renewed reports of mortality, however, once more obliged the Sanità to send two delegates to investigate further; one of these was Tadino, and the other an auditor of the tribunal. On their arrival they found that the calamity was no longer doubtful.

The districts of Lecco, Valsassino, and Como, were overrun by it; the villages were obstructed by barriers placed at their entrances; other villages were almost deserted, the inhabitants having fled, and the few who remained endeavoured to protect themselves against contagion by carrying musk, rue, rosemary, or a bottle of vinegar. This fact having been made known to the Sanità by le-

they published a bulletin, forbidding all intercourse between the city and the infected places.

Notwithstanding that the Governor (Spinola) had been duly warned of these facts, and that he had expressed great anxiety on the subject, he, on the 18th of November, published a proclamation commanding public rejoicings for the birth of Charles, eldest son of Philip IV., without suspicion or care of the danger which might arise from such a concourse of people at such a time. But can we wonder at the conduct of the Governor, involved as he was in the affairs of the war, when we find that the people, far from taking the necessary precaution against infection, actually felt ill-will to those who asserted that the prevalent disease was the plague, and resented their opinion with incredulous smiles or angry contempt? That such was the case, however, the records of the time assure us.

The same blindness and perversity of opinion pervaded the Senate, the Council of Decurions, and the magistracy. The tribunal of the Sanità was the only exception; they implored, nay, demanded co-operation, but with little effect. Even in this tribunal the precaution was far from being equal to the urgency; for, as Tadino affirms, there were only amongst them two physicians, who, persuaded of the seriousness of the danger, urged them to activity.

Another instance of the carelessness and inertness which marked every action of the government at this critical period was, that the bulletin above mentioned, for the prevention of communication with diseased towns, which had been resolved on the 30th of October, was not published till the 27th of the following month. By this time the plague had already entered Milan. Tadino and Ripamonti disagree as to the date, Tadino making the day of its first appearance the 22nd of October, and Ripamonti one month later. The following circumstances relating to its entrance into Milan are recorded by both.

A soldier entered Milan with a large bundle of clothes bought or robbed from German soldiers, and went to reside at the house of some of his relations in the *borgo* of the *Porta Orientale*. Almost immediately after his arrival he took ill, and was brought to the hospital, where the fatal signs of the disease were discovered under his arm, and on the fourth day he died. The Sanità, immediately after his death, caused his family to be sequestered, and his clothes and the bed in which he had lain to be burned.

The suspicion which had been entertained from the beginning of the nature of his disease, and the precautions used in consequence, prevented its further spread in that place, except in the case of a friar and two servants who had attended him, and who took the disorder in a few days after.

But the soldier had left the seeds of the disease in the house where he had lodged, and it was not long before their growth was fatally evident. The first person attacked was the master of the house, a lute-player named Carlo Colonna. As soon as his illness was known, all the lodgers were, by order of the Sanità, obliged to

enter the lazaretto, where the greater number of them became ill, and in a short time many died, manifestly of the contagion.

From time to time, in different quarters of the city, persons were attacked by the disease, and died; but the rare occurrence of these cases confirmed in the public mind the foolish and injurious conviction that it was not plague which had occasioned their death. Even the physicians added their voices to the general opinion, and were always ready with the name of some common disease to qualify every case of plague which occurred, whatever might have been the symptoms. The fear of the lazaretto prevented these cases from being duly reported to the Sanità. Attacks of the disease were concealed, the grave-diggers were corrupted, and even the lower officers of the Sanità, appointed to inspect the corpses, were bribed to give false evidence.

The tribunal of the Sanità, and especially its two physicians, Tadino and Settala, were the objects of extreme aversion to the people, so much so that they could not appear in the streets without being assailed by abusive language and even stones. It is related of Settala, then nearly eighty years old, that on one occasion, going to visit his patients in a sedan chair, a crowd collected round him, exclaiming that he was at the head of those who were determined to maintain that plague had broken out in the city, and that he had terrified the inhabitants merely for the sake of giving business to the physicians. He saved himself only by taking refuge in the house of a friend, to which by chance he was near; and thus he was rewarded for using his best efforts to save thousands of persons from death. A short time before he had received the title of *Benemerito* for having assisted in the torturing and burning of an unfortunate woman as a witch, whose guilt was presumed because her master suffered from unaccountable pains in the stomach, and because a former master had been strongly attached to her(*a*).

But towards the end of the month of March, illness and death became very common, especially in the Porta Orientale, accompanied by strange symptoms, as spasms, palpitation, lethargy, delirium, and the fatal livid spots and sores. These deaths, for the most part, took place after a very short and violent sickness, and even sometimes suddenly, without any previous indication of disease.

These physicians who had been opposed to the opinion of plague, being now obliged to give some name to the new disease, found that of pestilent or malignant fever; and even succeeded in persuading the public that the disease was not propagated by contact, an idea which caused great mischief. The magistrates, however, who now for the first time awoke, as from a dream, began to attend to the opinions and proposals of the Sanità; but money sufficient to carry out these intentions was not forthcoming. In the lazaretto, where things were in a state of the greatest confusion, every effort failed to establish a due degree of order till the Sanità and Decurions, not

(*a*) *Storia di Milano del Conte Pietro Verri.*

knowing which way to turn, entreated the Padre Commissario of the province to give them some officers capable of governing. The Commissario proposed as the principal Padre Felice Casati, a man well known for his charity, activity, and kindness; and as his assistant, Padre Michele Pozzobonelli, a man still young, but grave and severe in his habits. They were accepted with pleasure, and formally invested with full authority over the servants and officials of every grade in the lazaretto. From this time the Padre Felice continued indefatigable in his charge, assuaging tumults, comforting the dying, and sympathizing with the afflicted. In the beginning he contracted the disease, but, being cured, he returned to his pious undertaking with renewed ardour.

By degrees, the disease, which had hitherto been chiefly confined to the lower orders, began to spread amongst the better classes; amongst these the physician Settala was attacked, along with his wife, his two sons, and six persons in his service. Settala and one of his sons recovered, but the rest died.

At this stage of the disease it became impossible longer to deny its nature. Those who had till then denied that there was amongst them a germ of evil which might be propagated by natural means, and might commit the most frightful ravages, now endeavoured to find other causes in order to account for the spreading calamity. Unfortunately this was not difficult. At this time a common idea prevailed, not only here but in every part of Europe, that persons were in existence who had conspired to spread the plague by means of contagious poison and magic. Similar absurdities had been believed during the prevalence of many other pestilences, particularly that of half a century before. It happened also, that during the previous year a despatch had arrived from Philip IV. of Spain, warning the Governors that four Frenchmen, suspected of spreading poisonous and pestiferous ointments, had escaped from Madrid, and were supposed to have taken refuge in Milan.

This despatch was communicated by the Governor to the Sanità, but it appears that little notice was taken of the affair. But at the time of which we write, when the plague had broken out and was recognised as such, these circumstances appear to have made a stronger impression on their minds, and to have given rise to a suspicion of an organized plot. Two facts sufficed to convert this suspicion almost into a certainty.

On the evening of the 17th of May some individuals affirmed that they had seen persons engaged in anointing the partition in the cathedral of Milan, which served to divide the places appointed for the two sexes. On hearing of this, the President of the Sanità, with four officials, hastened to the cathedral, and, having inspected the partition, the benches, and the cistern for holy water, declared that they could find no mark to confirm the suspicion of poison, and contented themselves with directing the partition to be well washed, merely in compliance with public opinion. But this was far from

being satisfactory to persons oppressed by a blind terror; and accordingly, during the night, they caused the partition and benches to be carried out of the church.

This circumstance produced a great effect on the multitude, especially the sight of the heap of wood taken from the church, which appeared to them to authenticate the fact of its having been anointed. There still remains in the archives called San Fedele, a letter from the Sanità to the Governor, in which these facts are described.

The following morning a new spectacle met the eyes of the citizens. The doors of the houses and the walls were found streaked, as if by a sponge, with some yellowish, greasy substance. Whether this was a foolish jest or a wicked design to increase the public confusion, the thing is well attested; but it appears more reasonable to believe it the act of a few than the dream of many, especially as it was neither the first nor the last act of the kind. Ripamonti, who often derides and deplores the popular credulity on this subject, asserts that he had seen this plastering (*impiastramento*), and describes it. Also, in the above-mentioned letter, the members of the Sanità relate the circumstance in the same terms, and speak of experiments made on dogs with it, which had no bad effect; and they add that the whole affair seemed to originate rather in a foolish frolic than in a bad design.

In this opinion, however, the public in general did not agree. Some believed that it had been done by command of Don Gonzalo, in revenge for the insults he had received at his departure; some that it was an invention of the Cardinal Richelieu to depopulate Milan, in order to render himself master of it without trouble; and some, for some unknown reason, imagined Wallenstein to be the author of it. Some few there were who conceived it to be a foolish jest, and attributed it to the students.

Many persons were still unconvinced of the existence of the plague in the city; one of their last arguments, which was also used by some physicians, was, that several had recovered, and that, therefore, the disease could not have been plague, as in that case all would have died.—(Tadino).

To remove every doubt, the Sanità adopted an expedient,—a mode of speaking to the eyes,—which the state of the times seemed to require. It had been the custom of the citizens every year, towards Easter, to proceed in vast numbers, on a particular day, to the cemetery of San Gregorio, there to pray for those who had died during the prevalence of a former plague. It happened that, on the day appointed for this ceremony, in the year of which we speak, amongst other victims, a whole family had died. On the same day, at the time of the greatest crowd, amongst carriages and persons on foot and on horseback, the bodies of this family were, by order of the Sanità, conveyed on a cart to the cemetery, stripped so that all might see the fatal marks. A cry of horror was raised everywhere

on the appearance of the cart; the existence of the plague was no longer doubted, and the disease continued from that time to extend its ravages frightfully.

A report now arose that the walls, gates of public edifices, and doors of houses, were visibly anointed. This report gained a ready credence, because, as Verri remarks, it is more in accordance with our nature to attribute misfortunes to human wickedness, which we may revenge, than to recognise them as proceeding from a cause to which we can do no more than resign ourselves. An exquisite poison, instantaneous and most penetrating, were words more than sufficient to explain the violence, and all the most obscure and irregular symptoms of the disease. The poison was supposed to be composed of toads, serpents, and the foam which issued from the lips of persons sick of the plague. When to this was added the idea of magic, every effect became possible, and every difficulty vanished.

Whoever now maintained that the anointing had been a jest, or denied the existence of a plot, was considered to be blind or obstinote, if he did not fall under the suspicion of being one interested in turning public attention from the truth, an accomplice or an anointer, a word now become full of solemn and tremendous meaning. Ripamonti relates two facts on this subject, which he expressly tells us he has chosen, not as the most atrocious in their nature of those which happened daily, but because he was himself an eye-witness of both.

In the Church of San Antonio, on a solemn day, an old man of more than eighty years of age, after having prayed on his knees for some time, wished to sit down, and before doing so dusted the bench with his cloak. "That old man is aoninting the benches," cried some women who had seen the act. The people who were in the church rushed on the old man, caught him by the hair, white as it was, assailed him with kicks and blows, and dragged him out; nor did they cease until they brought him but half alive to the prison and the torture. "I saw him while they dragged him thus," says Ripamonti, "and heard nothing more of him, but I believe that he could not have survived many moments." The other instance, which took place the following day, was equally extraordinary, but not equally fatal. Three young Frenchmen, a scholar, a painter, and a mechanic, who had come to study in Italy, having approached the cathedral, remained for some time examining it attentively. A passenger saw them, and stopping, beckoned to others to approach, who formed a crowd round these persons, whose dress, and manner of wearing the hair, betrayed them to be strangers, and, worse than that, Frenchmen. As if to assure themselves that the material was marble, the young men extended their hands to touch it. This was enough. They were surrounded, put in irons, ill treated, and dragged to prison. By a fortunate chance, the Palace of Justice was not far from the cathedral; and by a still more fortunate chance, they were found innocent and set at liberty.

Meantime the Decurions repeatedly intreated the Cardinal Fede-

rigo, for his consent to a procession in honour of San Carlo, and after much importunity prevailed. We do not find that the Sanità, or any other authority, made any opposition or remonstrance. The only precaution they took was one which, without lessening the danger, indicated fear of it. This was to prescribe stricter rules for the entrance of persons into the city; and in order to secure the execution of them, the gates were kept shut. With a view of excluding infected persons from the procession, the doors of the sequestered houses, which, according to C. G. Cavatio della Somiglia, amounted to 500, were nailed up. On the 11th of June, at dawn, the procession issued from the cathedral, and, passing through all quarters of the city, stopped at every place where, during the preceding plague, a cross had been erected by San Carlo.

But the following day, while a presumptuous and fanatical confidence occupied the minds of many who believed that the procession must have put a stop to the plague, the deaths increased to such a degree, and so suddenly, that there were none who did not acknowledge the procession as the cause of it.

But—wonderful and melancholy strength of a general prejudice! —the greater number attributed the increase of the calamity, not to the collecting together of so many persons for so long a time, not to the infinite multiplication of casual contact, but to the facility which the anointers had found in executing their wicked designs. It was said that, mixed among the crowd, they had infected with their ointments as many as they could. But as this did not appear a cause sufficient to account for a mortality so vast and so diffused; as it was impossible for the most attentive eyes to perceive traces of anointing, or spots of any kind, on the walls or elsewhere; they had recourse to the belief, already received into the common science of Europe, of poisonous powders. It was said that such powders, being scattered along the streets, and particularly in the places where the procession had stopped, had adhered to the skirts of dresses, and especially to the feet, as on that day many had followed the procession barefooted as a penance.

From that day the fury of the contagion continually increased. In a short time there remained scarcely a house uncontaminated by it, and the population of the lazaretto, according to Somiglia, rose from 2000 to 12,000; and later, as almost all agree, to 16,000. On the 4th of July we find, by a letter from the Sanità to the Governor, that the daily mortality exceeded 500, and, if we may believe Tadino, rose during the height of the disease to 3,500. He also affirms that after the plague, the population of Milan, which before had exceeded 250,000, was found reduced to a little more than 64,000.

On the Decurions rested the weight of providing for the public necessity, and remedying what could be remedied in such a disaster. They were every day obliged to substitute and increase public servants of every kind, *monatti*, *apparitori*, and *commissari*. The first were employed in the most painful and dangerous services of the plague, that of taking away the corpses from the houses, the streets,

and the lazaretto; bringing them in carts to the pits, and burying them; leading the sick to the lazaretto, and directing them; and burning or cleansing infected goods. The employment of the *apparitori* was to precede the carts, warning the passengers by the sound of a bell, that they might retire. The *commissari* regulated both under the immediate orders of the Sanità.

It was necessary to keep the lazaretto supplied with physicians, surgeons, medicines, provisions, and all the appliances of sickness; and also to find additional accommodation for the patients who arrived there daily. For this purpose wooden sheds were constructed in the internal space of the lazaretto, as well as a new lazaretto, consisting of sheds surrounded by a wooden partition, capable of containing four thousand persons.

At this time the large pit which had been dug near the lazaretto being filled with corpses, and the number of them remaining unburied in the city increasing daily, the magistrates, after having in vain demanded assistance, were reduced to acknowledge that they did not know how to act. In this extremity the President of the Sanità had recourse to the two good friars who superintended the lazaretto. The Padre Michele pledged himself that at the end of four days no corpses should be found in the city, and that at the end of eight, pits should be dug of size sufficient for the worst that could happen.

Accordingly, in company with another friar, and some persons given him by the Tribunal, he left the city in search of peasants; and partly by the authority of the tribunal, partly by his habit and exhortations, he collected about 200 of them, whom he employed in digging three enormous pits; he then sent monatti from the lazaretto to inter the dead, so that on the day fixed his promise was fulfilled.

Once, the lazaretto remained entirely without physicians; but, by means of great payment and promised honours, a few were procured, though not in proportion to the necessity. Provisions were often on the point of failing; hence it was feared that deaths would occur from hunger; but more than once, in the last extremity, abundant contributions were furnished from the charity of private persons.

In the general confusion and relaxation of all authority, caused by the continuance of the disorder, there were not wanting persons who took advantage of the public distress for their own wicked ends. The monatti and apparitori consisted almost entirely of men over whom the attractions of plunder and licentiousness had more power than the fear of contagion and horror of the employment. Certainly the strictest rules were prescribed to them, and the severest penalties threatened. Their places were assigned to them by their superiors, the commissari, over whom were delegates, chosen from the magistrates and nobles, and armed with authority to provide summarily for every occurrence. But as the number of those who died or left the city daily increased, the monatti and apparitori found themselves almost entirely unrestrained by any superior power; the monatti especially made themselves arbiters of everything. They entered as masters or as enemies into the houses, robbed and ill-

treated the unfortunate persons subjected to their control by sickness; and laid their infected hands on healthy persons, children, parents, husbands, and wives, threatening to drag them to the lazaretto if they were not redeemed with money. On other occasions they set a price on their services, and refused to carry away the putrid corpses unless for so many crowns. It is even asserted by Tadino that the monatti and apparitori purposely let fall infected clothes from the carts, in order to propagate the plague, which had now become a considerable source of revenue to them. Other wretches, feigning themselves monatti, and wearing a bell, the prescriptive distinction of a monatto, fastened to one foot, entered unoccupied houses, or houses occupied only by the dying, and plundered them with impunity. All these things tended to increase and confirm the terror which the anointers inspired. Ripamonti, speaking of this time, says: "The heaps of corpses always before the eyes, always under the feet, made the whole city a kind of dead house." There was something most hideous and frightful in that unrestrained and mutual distrust, which rendered not only neighbours, friends, and guests, suspected, but occasioned even husband and wife, father and son, brother and brother, to live in terror of each other. And—horrible to relate!—even the domestic table was feared as a hiding place of poison."

In the beginning, it was believed that these anointers were only actuated by motives of ambition and covetousness, but as the disease progressed it was asserted that there was an unknown diabolical pleasure in anointing, and an attraction which governed the will. The ravings of the sick, who accused themselves of what they had feared from others, appeared like revelations, and rendered everything credible. It often happened even that plague-patients, in their delirium, performed those actions which they had imagined the anointers to have done, and this had more effect than their words in convincing the multitude.

Amongst the stories to which this anointing mania gave rise, one particularly deserves notice, from the general credence which it obtained.

It is related that a person on a certain day saw a carriage arrive at the square of the cathedral, within which was a great personage, whose countenance was dark and inflamed, his eyes were fiery, his hair erect, and the expression of his countenance threatening. Whilst the first-mentioned person continued looking on attentively, the carriage stopped and the driver invited him to enter it. He complied, and after many turnings descended at the door of a certain palace, which he and the other entered. Here were presented to their view pleasures and horrors, deserts and gardens, caverns and saloons, and in them phantoms seated at council. Finally, they showed him great chests of money, and desired him to take as much as he pleased, with the condition that he should also take a little vessel full of ointment and go about anointing the city. He, however, not consenting to execute this commission, found himself in a

moment in the place from whence he had been taken. This absurd story, which Ripamonti says was not sufficiently derided by any writer of authority, spread through all Italy and beyond it. In Germany a print was made of it, and the archiepiscopal Elector of Magonza wrote to the Cardinal Federigo to inquire if he ought to believe those extraordinary facts which were related of Milan. The answer given was, that they were dreams.

The dreams of the learned, if not of the same nature, were equally disastrous in their effects. The greater number of them believed that they had found both the announcement and the cause of the misfortune, in a comet which had appeared in the year 1628, and in a conjunction of Saturn with Jupiter. Another comet which had appeared in the June of the year of the plague, was taken for a new warning, nay, for a manifest proof of anointing. They searched into books, and were but too successful in finding examples of plague manufactured as they affirmed. Livy, Tacitus, Dion, and even Homer and Ovid, were cited, along with many other ancients who have related or referred to similar facts. They were not wanting also in quotations from authors who had written on poisons, ointments, powders, and magic, and especially from the fatal Delrio, whose "Disquizioni Magiche," a collection of all that, up to his time, mankind had dreamt on the subject of magic, gave authority for more than a century to legal, horrible, and uninterrupted sacrifices of life.

Tadino, who had watched the progress of the disease, and who had declared that it was plague, that it was communicated by contact, and that, if precautions were not taken, it would infect the whole country, now seems to have changed his opinion, for we find him, from the same appearances, concluding in favour of poisonous and malignant anointing. He who, in the case of Carlo Colonna, the second who had died of plague in Milan, had noted the delirium as one of the symptoms of the disorder, nevertheless adduced the following alleged facts, in proof of the anointing process and a diabolical plot. He declares that two witnesses affirmed that they had heard from a sick friend that one night some persons had come into his room, and offered him a cure and money if he would anoint the houses in the neighbourhood; and that on his refusal they had gone away, and left behind them a wolf under the bed, and three black cats on it, which remained until day!!! Even the good Cardinal, so superior to the greater number of his contemporaries, seems to have partly credited this ridiculous narrative, though he believed it to be greatly exaggerated. In the Ambrosian Library there is preserved a little work of his, in which are the following words: "It was a common opinion that these ointments were compounded in various places, and that there were different ways of working them, some of which appear true, and some invented." In the same library there remains a letter in which the Chancellor informs the Governor, with great concern, of his having received notice that in a country house belonging to two Milanese gentlemen, poison was compounded in such quantity that forty men were employed at it, assisted by four

Brescian gentlemen, who brought the materials from Venice. He adds, that he had very secretly taken the necessary measures to send there the podestà of Milan and the auditor of the Sanità, with thirty cavalry soldiers; that one of the brothers had been warned in time to conceal the proofs of his crime, but that, nevertheless, the podestà had gone with the soldiers to take informations, and to arrest all who were guilty. This affair appears to have ended in nothing; but in other cases many persons were tried and condemned to the most atrocious punishments for having propagated the plague by means of ointments or powders, or both. The particulars of these trials are to be found in Manzoni's "*Storia della Colonna Infame.*"

The plague arrived at its height towards the end of August. It is impossible to describe the wretchedness which reigned throughout Milan at this period. The weather was close, the air heavy, everywhere loaded with an equally dispersed fog, which appeared to obscure the sun without promising rain. The country around was uncultivated and arid; not even a drop of dew refreshed the faded verdure and the withered and languishing leaves. A dead silence reigned through the streets, unbroken, except by the melancholy sound of the bell carried by the apparitori, announcing the approach of the dead cart, heaped full of corpses. In all the squares, and in the principal streets, appeared the frightful machine for torture, in order that the deputies of each quarter might have the means of immediately applying it to every one who appeared deserving of punishment, such as sequestrated persons who left their houses, subalterns who did not execute their duty, and similar offenders.

Trade was nearly at an end, and the little which remained was transacted by means of pincers which handed out the required article, while the money was placed in a vessel of vinegar and water.

The quarter of the city called Porta Novo was that which suffered most from the disease. In that neighbourhood such had been the fury of the contagion, and the fetor of the corpses, that the few remaining survivors were forced to leave it. In one street all the doors of the houses were locked, owing to suspicion or terror, except those which were uninhabited or had been broken into. Some were nailed and sealed, to show the presence of the plague there; some were marked with a cross made with charcoal, as a signal to the monatti that there were dead to be carried away. At every step were seen loathsome rags, infected straw or blankets, which had been thrown from the windows; and even corpses either of persons who had died suddenly in the streets, or which had perhaps fallen from the carts, or been thrown from the windows; to such a degree had the continuance and severity of the misfortune hardened the hearts of the survivors. At that time about two-thirds of the population had died; and of those who survived, a great part were sick or had left the city; so that the number of persons who were seen out of doors was reduced almost to nothing. Scarcely one could be met in whom something strange was not to be observed, which gave indication of the fatal and general change. Persons of

the highest rank appeared without mantles, then a most essential part of the dress; priests were to be seen without cassocks, and monks in their doublets. In short, every article of dress was discarded, which, in flying about, might touch anything, or, what was dreaded more than all, give opportunity to the anointers. Beards were allowed to grow, and hair was left entangled, not only from the neglect which springs from long dejection, but on account of suspicion which had fallen on the barbers, one of their number, Giangiacomo Mora, having been condemned as a notorious anointer. Most persons carried sticks in their hands, or even pistols, as a threatening admonition to any who might wish to approach too closely; others had odorous pastilles, or perforated balls of metal or wood, within which was sponge soaked in medicated vinegar, which they constantly applied to their noses. Some wore phials containing quicksilver, hung from their necks, persuaded that it had the virtue of absorbing and retaining every pestilential exhalation. Gentlemen not only went out without their accustomed followers, but were to be seen with baskets on their arms purchasing the necessaries of life. Friends, when they met in the streets, saluted each other from a distance with hasty and silent signs. Persons walking had much to do to avoid the loathsome and lifeless obstacles with which the ground was encumbered. Each endeavoured to walk in the middle of the street, fearing that infected articles or corpses might be thrown from the windows, or dreading the poisonous powders which it was believed were often thrown on the passengers, or the ointments with which they conceived the walls to be anointed.

The lazaretto contained at this time (the end of August) 16,000 patients. The state of the weather before adverted to, which oppressed all nature, added to the sufferings of its wretched inmates. Those already infected suddenly sank under the new oppression, and the last struggles of the dying were more painful. Amidst the misery to be seen throughout the lazaretto, a strange contrast was presented in the room assigned to those infants whose mothers had died of the plague. Some of them were nursed by women who had lost their own children, and some by goats, which, as if inspired with a maternal feeling, attended to their cries, and endeavoured to accommodate themselves to the position of the infant.

The disorder was now at its height, and, after the sudden increase of deaths caused by the state of the weather, an equally sudden decrease, or almost a cessation, took place. It was attributed to a tremendous fall of rain which continued for two or three successive days and nights. After this, almost no deaths occurred in the lazaretto, which, therefore, became useless, except to restore those within its walls to health. A quarantine was ordered when these returned to their houses, and within a week from the beginning of the rain the doors and shops of the city were re-opened, and there remained nothing more of the plague but some lingering traces (*strasccio*), which such a scourge always leaves behind it for some time.

MORAL.

Such is the history of this frightful visitation, one of the most terrific on record. Let the world learn from it a lesson against supineness, obstinacy, and want of unanimity in the councils of those who undertake the awful responsibility of protecting a nation from the ravages of famine and pestilence, whether they be governments, legislators, physicians, or political economists.

EXTRACTS

FROM THE RECORDS OF THE CORPORATION OF BARBER SURGEONS OF DUBLIN.

By WILLIAM D. MOORE, A. B., M. B.

In endeavouring, on a former occasion(*a*), to trace the origin and history of pharmacy in Ireland, I gave a brief account of some of the ancient charters and records of the body incorporated as the Corporation of Barbers, Barber Surgeons and Barbers, Surgeons, Apothecaries, and Periwig-makers, by the successive grants of Henry VI., Elizabeth, and James II., respectively. These records, as I then mentioned, I had, after much search, found in the possession of Michael Farrell, Esq. Shortly after the publication alluded to Mr. Farrell died, and his son, Mr. Samuel Farrell, very kindly intrusted to me the documents which his father had saved from destruction, in order that I might carry out a suggestion which I had formerly made, that they should be deposited in a public library. The possession of these during the past winter has enabled me to examine them at my leisure, and this examination has fully proved that, while the government of the professions of surgery and pharmacy was legally intrusted to the body I have mentioned (in the case of surgery, until the establishment of the Royal College of Surgeons in 1784, and in that of pharmacy until the incorporation of the apothecaries of Dublin as the Guild of St. Luke, in 1745–6), these professions, at least since the commencement of the eighteenth century, rejected the yoke of a corporation who felt it to be part of their duty to give their deliberate opinion that "three Bob Wiggs and a Tye Wigg taken up from — M'Namara are not merchantable goods," and to order that he should be prosecuted at law "for vending or exposing to sale the same, in order to defraud and cheat the publick"(*b*).

Nevertheless several "chyrurgeons" appear from the Transaction Books to have been from time to time admitted; it is extremely

(*a*) See vol. vi. of the present series of this Journal, p. 64.
(*b*) Transaction Book, 24th November, 1720.

probable, however, that most of these were barbers, who, in addition to their more immediate calling, practised phlebotomy, tooth-drawing, &c. Some of them appear to have been lamentably ignorant, and fully to justify the allegation of the College of Physicians, in reference to the intrusion of the surgeons, that "unskilful illiterate persons" were in the habit of practising physic(*a*), for in 1695 Richard Shore, chirurgeon, signs *with his mark* a bond not to "learn or instruct any apprentice or other person in any art, science, or trade now used by any of the members, &c., until he shall be admitted a free brother of the corporation." Richard Burn, in 1704, in like manner, signs a similar bond with his mark(*b*).

From the "book of quarterages and entry of foreigners" it would appear that this body endeavoured occasionally to keep the several branches over which they presided distinct; thus, in 1693, we find Charles Chambers, apothecary, bound in the penal sum of £40 not to practise barbing, chirurgery, or peruke-making, without leave of the corporation first had. Stephen Cassan, chirurgeon, is in like manner bound not to practise pharmacy or peruke-making; Daniel Rowle, barber and peruke-maker, is restrained from "intruding on the corporation by practising pharmacy or any part of chirurgery, phlebotomy and tooth-drawing only excepted."

Some memoranda which occasionally occur in the Transaction Books may throw some light on the customs of the times; thus it is stated that in 1691 John Ceevy, mountebank, paid 2*s.* 9*d.* for his stage; and in 1701, £1 3*s.* was paid as a retaining fee to the Recorder, and £2 8*s.* 6*d.* as a fee to the Solicitor-General, "towards prosecuting those persons that worke up horsehaire and other unlawfull haire."

Thus also in 1731 we find an order for the corporation to ride the franchises(*c*) with tye perukes and long cravats, as usual. In 1750–1 a committee was appointed "to inspect into and detect the several abuses committed by barbers and periwig-makers in the city of Dublin, by shaving and dressing wigs on the Lord's Day, commonly called Sunday, and all other abuses;" and at a subsequent meeting a fine of 10*s.* 10*d.*, for the use of the poor of the corporation, was imposed for every such violation of the Sabbath : but if one barber should shave the customer of another (or dress his wig) on the Lord's Day, the penalty was to be 30*s.*

A resolution appears on the books, 30th September, 1703, to take steps to defeat the attempts of several surgeons of the guild and several "foreigners"(*d*), surgeons who had combined together and printed a case or address to Parliament, endeavouring to ob-

(*a*) Journal of the House of Commons (Ireland), vol. iii. p. 429; and Dublin Quarterly Journal, vol. vi. p. 84.

(*b*) Book of Quarterages and of Entry of Foreigners.

(*c*) See vol. vi. p. 88.

(*d*) For the meaning of this term, as used by the corporation, see vol. vi. p. 87.

struct all the brethren of the Guild, who were not educated or bred chirurgeons, from practising surgery, and by that means to make null and void the several charters granted to the corporation, to the great prejudice of the brotherhood.

In 1714 the corporation, having prosecuted some persons for infringement of their rights, received a reprimand from the Lords Justices, conveyed through their secretary, Edward Budgell, Esq. Their Excellencies' communication concluded with the advice to let such parties alone for the future. The corporation, however, were not so easily diverted from their purpose, and sought the intervention of the Lord Mayor and Recorder; the consequence of which was, that their Excellencies "receded from what had been proposed in their first letter," stating that the matter had been previously misrepresented to them; and declared that they were resolved never to do anything which might in the least appear to violate the rights of a corporation.

In 1716 a correspondence took place between the corporation and Mr. Proby, at that time His Majesty's Chirurgeon-General for Ireland, which, as Mr. Proby's letters are characteristic both of the times and of the writer, will, I trust, hereafter appear at length in his biography. In it the corporation complain of Mr. Proby's invasion of their rights, in practising surgery without being a member of their body, they only having a power, by ancient laws, to regulate the practice of chirurgery, &c.; and state that the high position held by him induced many to follow his example. Mr. Proby in his answer expresses his readiness to agree in anything calculated to promote the improvement of chirurgery, and to establish an amicable correspondence among its professors, but doubts that the constitution of the corporation was such as to render it likely that his joining the body would promote these ends : however, he concludes by proposing a conference on the subject.

Nothing appears to have been done at this time, for the correspondence was renewed in 1721. From this second correspondence we learn that many of the surgeons of Dublin, Mr. Proby among the number, were in the habit at that time of holding monthly meetings. Of these meetings, I believe, no other record exists.

Orders for the prosecution of surgeons and apothecaries practising without being free of the corporation frequently appear on the books. On the 29th October, 1729, a committee of nine was appointed to assist the Master in treating with the chirurgeons. At one time a dispute existed between this corporation and the guild of merchants, as to which was entitled to demand quarterage(*a*) of the apothecaries.

28th April, 1735.—Charles Lucas and others were admitted free, "as if they had respectively served their apprenticeships to free brothers of the fraternity."

18th July, 1737.—It was ordered that the suit commenced in

(*a*) See vol. vi. p. 87.

the name of the Treasurer of the city of Dublin, against Robert Adair, chirurgeon, then depending in the King's Bench on a *habeas corpus*, should be carried on and prosecuted at the charge and expense of the fraternity. I could not find any record of this trial in the books preserved at the Crown Office.

At a meeting held on 12th October, 1741, being quarter day, the corporation directed certificates of freedom to be issued to the President, Censors, and Fellows of the College of Physicians. This was preparatory to a plan brought forward at an adjourned meeting held a week subsequently, for the examination of surgical and pharmaceutical candidates for the freedom of the guild. The resolution of the corporation, having recited the objects for which it was established, and that the several arts of barbers, chirurgeons, apothecaries, &c., were considerable branches of physic or medicine, and that the well-being and regulation of the guild much depended upon a just subordination to their superiors in art, the physicians, and upon a just harmony and good understanding with them, goes on to state that the President, Censors, and Fellows, had, of their abundant humanity and regard to the public good, agreed as much as in them lay to assist the corporation in restoring the arts of chirurgery and pharmacy to their natural dignity and pristine utility to the public, and, for the better mutual communication and consultation, had condescended to accept of the freedom of the corporation. It was then enacted, that no chirurgeon should be admitted free of the corporation until he had undergone an examination by and before the College, and produced to the corporation a certificate of his due qualification under the hands of the President and Censors, and the seal of the College (John Nicholls, Esq., his Majesty's Surgeon-General, only excepted, who had already given sufficient proof of his merit and knowledge in his art); and that apothecaries should be admitted in a similar manner. It was also provided that, so soon as a sufficient number of free surgeons were thus admitted, a committee of twelve should be appointed by the corporation, of whom the Surgeon-General for the time being was to be the first; and that a like committee of twelve apothecaries should be, on the then next following quarter day, chosen out of the free brethren of the guild, by which committees all surgeons and apothecaries to be admitted should be openly examined before the President and Censors of the College, provided that, if the latter refused or neglected to attend, the Director and committee of each occupation might proceed to examine and certify without them. A surgeon, being Master or Warden of the corporation, was to preside over the committee of surgery; and an apothecary, being Master or Warden, was to preside over that of pharmacy, with the title of Directors; and it was provided, that one of each faculty should annually hold the office either of Master or Warden.

In the Transaction Books of the King and Queen's College of Physicians, there is a notice of this law of the barbers having been presented to them; the consideration of it was deferred to a future

occasion, and does not appear ever to have been entertained. It is most likely this law was never put in force, but its enactment proves three things:—first, that the necessity of a test on the admission of parties to practise surgery and pharmacy was at that time felt; secondly, that, at the time the resolution was passed, there were not twelve surgeons free of the corporation; thirdly, that there were at least twelve apothecaries who then possessed the freedom of the guild.

23rd June, 1744.—Charles Lucas, Esq., was elected Master of the corporation, and in the following November he was unanimously elected to be returned, with seven others, to the Lord Mayor, that four out of the eight might be selected as "numbers" to represent the corporation in Common Council. This was the mode of election, until, by the 33 Geo. II., the entire election was vested in the several corporations(*a*).

In October, 1762, the corporation petitioned the Lord Mayor, Sheriffs, &c., to restore to them the two representatives in Common Council, which had been transferred to the apothecaries' corporation.

In the list of the free brethren for 1771, the name of Charles Lucas, M. D., appears, with the following notice appended: "Died, greatly regretted by his brethren, the 4th November, 1771." Dr. Lucas was an active member of the corporation, and repeatedly served the office of Master. Numerous addresses to him appear in the Transaction Books, which, as well as other notices connected with him, may be useful to his future biographer.

On the 3rd December, 1781, a meeting was held to take into consideration an order of the Lord Lieutenant, referring to the corporation a petition presented to His Excellency by the principal surgeons of Dublin, together with the draft of a charter alluded to in the petition. The corporation was required to examine the allegations of the petition, and to report a true state of the case, together with their opinion whether there was any or what objection to granting the prayer of the petitioners. The petition was as follows:

"TO HIS EXCELLENCY FREDERICK EARL OF CARLISLE, LORD LIEUTENANT GENERAL AND GENERAL GOVERNOR OF IRELAND.

"The humble petition of Henry Morris, &c. &c. &c., on behalf of themselves and others the principal surgeons of the city of Dublin,

"Sheweth,—That by the royal charter bearing date in the nineteenth year of the reign of her late Majesty, Queen Elizabeth, the surgeons of the city of Dublin were incorporated with the barbers or peruke-makers.

"That since the grant of the said charter for uniting the said two professions in one corporation, those practising surgery have, from their sole study of, and constant application to the science of

(*a*) An Act for the better regulating the Corporation of the City of Dublin, and for extending the Power of the Magistrates thereof.

surgery, rendered the profession and practice thereof of great public utility to this kingdom; and that the barbers or peruke-makers belonging to the said united corporation, are now and for many years have been employed in a business foreign to and independent of the practice of surgery.

"That the surgeons, who are now become a numerous and considerable body, find their union with the barbers inconvenient in many respects, and in no degree conducive to the progress of surgical knowledge.

"That in the eighteenth year of the reign of his late Majesty, King George II., the surgeons of the city of London, who, from the thirty-second [year of the] reign of King Henry VIII., had been united in one corporation with the barbers, were separated from them, and made a distinct corporation, by means whereof the profession of surgery has been highly cultivated and improved in England.

"That your petitioners humbly conceive that a similar regulation in this kingdom would be a means of further improving the science of surgery, and of great advantage to the public.

"Your petitioners therefore humbly pray your Excellency to recommend to His Majesty, that His Majesty may be graciously pleased to grant his royal letters patent, under the great seal of this kingdom, for dissolving and vacating the union and incorporation of the barbers and surgeons by the said charter of Queen Elizabeth, and for making your petitioners, and such others as may hereafter be elected members, a separate and distinct corporation, by the style and title of 'The Royal College of Surgeons in Ireland;' with such powers and authorities, and under such regulations, as are contained in the annexed draft (which is humbly submitted), or in such other manner as to His Majesty in his great wisdom shall seem meet."

To this the corporation returned the following answer :—

"TO HIS EXCELLENCY FREDERICK EARL OF CARLISLE, LORD LIEUTENANT GENERAL AND GENERAL GOVERNOR OF IRELAND.

"MAY IT PLEASE YOUR EXCELLENCY :—

"In obedience to your Excellency's order, bearing date the 19th day of November last, whereby your Excellency was graciously pleased to refer to us the annexed petition from Henry Morris, William Ruxton, George Daunt, John Whiteway, Henry Lyster, Robert Bowes, Samuel Croker King, Gustavus Hume, John Neil, Philip Woodroffe, Francis Foreside, William Dease, and James Henthorn, on behalf of themselves and others the principal surgeons of the city of Dublin, together with a draft of a charter hereunto also annexed, and to which they, the said surgeons, in their said petition referred ; and that we should examine the allegations thereof, and report unto your Excellency a true state of the case, together with our opinion thereon, whether there is any or what objection to granting the prayer of the petitioners:

"We, the Master, Wardens, and Fraternity of Barbers and Chirurgeons, &c., or Guild of St. Mary Magdalene, within the city of Dublin, in full Hall assembled, having maturely examined the matters so to us referred, beg leave humbly to submit to your Excellency the following true state of the case, with our opinion thereon, and objections to the granting the prayer of the petitioners in the full extent which they desire, or dissolving the charter granted to our predecessors in the nineteenth year of the reign of Queen Elizabeth.

"We find that the barbers of the city of Dublin have been an ancient and loyal corporation, incorporated by royal charter granted to them and their successors for ever, by King Henry VI., in the twenty-fifth year of his reign, and were then considered, reputed, and allowed to be the only persons fit and properly qualified to exercise the art or mystery of chirurgery within the said city of Dublin, the liberties and precincts thereof.

"We also find that there afterwards appeared in the said city of Dublin, a society or community of men who took upon themselves to practise or exercise the said art, and assumed the name or appellation of chirurgeons ; and that Queen Elizabeth of glorious memory, in the nineteenth year of her reign, upon the joint application of the then Master and Wardens and fraternity of barbers, and of the said society or community of chirurgeons, was graciously pleased by her royal charter to incorporate them together, and make them one body politic for ever, by the name of 'The Master, Wardens, and Fraternity of Barbers and Chirurgeons, of the Guild of St. Mary Magdalene within the City of Dublin,' with divers extensive and exclusive privileges to them and their successors.

"We find that the said corporation of barbers and chirurgeons was strengthened, enlarged, and flourished after the said union and charter of Queen Elizabeth, and all along cultivated, assisted, and improved each other, until some of the surgeons have of late years thought proper to absent themselves from the community, company, public assemblies, and offices of the said corporation of barbers and chirurgeons; but several of the said surgeons are still free brothers of the said corporation, and thereby enjoy the several privileges and immunities of citizens of Dublin.

"That the Master and Wardens, and each individual of the said corporation, are in duty bound to hand down inviolably to their successors the royal charter so granted to them as aforesaid, without any diminution, violation, surrender, or forfeiture thereof.

"We are therefore humbly of opinion, for the reasons aforesaid, that we cannot nor ought we, by any act or concurrence whatsoever, consent that the prayer of the petitioners should be granted, so as to dissolve, disannul, or make void the said royal charter so granted to our predecessors by the said Queen Elizabeth; and humbly submit to your Excellency that the same cannot be dissolved or disannulled without our incurring some forfeiture thereof, or surrendering the same ; any such forfeiture whereof we, as faithful and

loyal Protestant subjects of the best of kings, shall always carefully and dutifully endeavour to avoid.

"Permit us at the same time to return to your Excellency our most sincere and unfeigned thanks for your candour and condescension in referring the said petition to this corporation.

"Given under our common seal, at our Hall in Back-lane, this 14th day of December, 1781.

"CALEB HUGHES, *Master.*

(*Seal.*) LAURENCE BALL, } *Wardens.*
JAMES BLACKLIN, }

"DANIEL BOURNE, *Clerk of Guild.*"

The charter was, however, granted, and bore date 11th February, 1784.

Notwithstanding the statement of the corporation, that several of the surgeons still (in 1781) possessed its freedom, there is abundant evidence to prove that, at least from the commencement of the eighteenth century, the great bulk of the professions of surgery and pharmacy was external to it. The resolution of 30th September, 1703, in reference to "foreigners, surgeons," and the frequent orders which appear on the books for the prosecution of surgeons and apothecaries for intrusion, in none of which prosecutions do they seem to have been successful, would be sufficient for this purpose. In addition, however, scarcely one of the hospital surgeons in the last century appears in the rolls of the corporation. Of the ten apothecaries whose names are mentioned in the charter of 1745, only three seem to have been free of the corporation of barber surgeons. Of 202 physicians, surgeons, and apothecaries mentioned in the Medical Review published in 1775, the names of but fourteen appear in the corporation roll; and as in the Medical Review the Christian name is not always given, it is impossible to say whether all even of this number belonged to the corporation or not. Some are sufficiently described to show that they did. Of the thirteen petitioners for the establishment of a College of Surgeons, but one, Philip Woodroffe, appears to have been free of the guild.

Several influential gentlemen (some of whom were non-medical) were members of the corporation; among these were William Clement, M. D., Vice Provost of Trinity College, and M. P. for the University; Rev. Thomas Leland, D. D. Senior Fellow, T.C.D., and author of a History of Ireland; James Digges La Touche, Esq.; Francis White Edgeworth, Esq.; &c. &c. Many of these, doubtless, joined the guild for the sake of the political privileges they thus acquired.

The charter of Henry VI. appears, as I mentioned on a former occasion(*a*), to have been lost; this probably occurred in 1754, when the charters of the corporation were given out to be translated. It is likely that it was similar to that granted to the barber surgeons in England fifteen years subsequently. If so, the suggestion I

(*a*) Dublin Quarterly Journal, vol. vi. p. 76.

formerly threw out, that the profession of pharmacy in Ireland originally branched from that of surgery, receives additional confirmation; for the charter of Edward IV. gives the English barber surgeons authority to inspect the instruments, plasters, and other medicines used by the faculty: "Necnon supervisum et scrutinium omni modorum, instrumentorum, emplastrorum, et aliarum medicinarum, et eor recept. per dictos barbitonsores et surgicos hujusmodi ligeis nostris pro eorum plagis et vulneribus, lesionibus, et hujusmodi infirmitatibus curand. et sanand. dand. imponend. et utend. quotiens et quando opus fuerit pro commodo et utilitate eorundem ligeorum nostrorum;" thus constituting them, in fact, a faculty of surgeon apothecaries(*a*).

I have thought that I should best secure the preservation of these documents, by presenting them to the library of Trinity College. Those which I have there lodged are the following:

1. The charter granted by Queen Elizabeth; 1576.
2. The patent or grant of Arms by Charles I.; 1645.
3. The charter by James II.; 1687.
4. A translation of Elizabeth's charter; 1781.
5. Three freemen's rolls on parchment.
6. Two ancient keys.
7. The silver seal of the corporation; date 1673.

The above are contained in a wooden case covered with red leather, bearing the arms of the corporation, and the following inscription:

"This case, containing the charters of the Corporation of Barber Chirurgeons, &c., was repaired A. D. 1808.

"George Gillespie, *Master.*
James Leahy, } *Wardens.*"
John Clarke, }

The books are as follow:

The Book for Enrolment of Apprentices, of which four leaves are of parchment; date 1535. The rest of the book is of paper; earliest date 1587.

2. Book of Quarterages and of Entry of Foreigners; 1688.
3 Transaction Book; 1703.
4. Book of Bonds; 1705.
5. Transaction Book; 1757.
6. Book of Lists of Brothers; 1758.
7. Transaction Book, entitled the "Book of Laws and Statutes," &c.; 1792.
8. Transaction Book, entitled the "Book of Laws and Statutes;" 1826.
9. Roll Book; 1827.

(*a*) See Dr. Gray's Report on the Professions of Physic and Surgery. Dublin, Browne, 1845, p. 14. Also Willcock's Laws of the Medical Profession, p. clxviii.

MEDICAL MISCELLANY.

Case simulating Pericarditis, in which a Friction Sound was produced by Emphysema of the Anterior Mediastinum. By Alfred Hudson, M. D., Physician to the Fever Hospital, Navan.

As I am not aware that a case similar to the following has been before reported, I offer to the profession, through the pages of the Dublin Medical Journal, the following short notice of it.

Patrick Murtagh, aged 12, was admitted into the Navan Fever Hospital on the 12th of January, 1849. He states that for the last fortnight he has suffered from cough and dyspnœa, and three days since was attacked with severe vomiting and purging, accompanied by frequent shiverings and violent palpitation of the heart.

At my visit on the 13th, his face presented a livid, sickly paleness of colour, with an anxious expression; the eyes were glassy and sunken; the lips livid; heat of surface low and variable; the chest seemed somewhat rounded anteriorly, the clavicles standing forward with a deep hollow above them. He had a frequent, short, hard, and dry cough, with extreme dyspnœa and pain across the chest.

The præcordial region was dull on percussion over a large extent. The heart's impulse was strong and heaving; the sounds were clear and distinct, but were accompanied by a rough crackling frottement; this was most distinctly heard over the base of the heart, and a little to the left of the sternum. The character of this friction sound differed in no way from that attending pericarditis with copious effusion of lymph; and the only thing which struck me as at all peculiar in it, was its remarkable distinctness from (though perfectly synchronous with) the sounds of the heart. As, however, it continued when the respiration was interrupted, I did not doubt that it was owing to effusion in the pericardium. The pulse was 110, hard, and small; the tongue red and thickly coated; urine scanty and high-coloured, &c.

The treatment pursued, without any relief, even of a temporary character, consisted of repeated application of leeches to the præcordial region, blistering, and mercurial inunction.

On the 14th it was noted that both sub-clavicular regions were dull on percussion, and also the entire of the left side as compared with the right; respiratory murmur loud and prolonged.

On the 15th there was great prostration; the heart's action was so faint as to be scarcely perceptible; no pulse at the wrist; the body and extremities became cold. He rallied somewhat, but the breathing continued much oppressed, the jugular veins much dis-

tended, and the body covered with a cold clammy sweat. During the night the heart's action became intermittent, and the respiration a convulsive gasping; and at 11 A.M., of the 16th, he expired.

On raising the sternum, and bringing the pericardium into view, the natural semi-transparency of this membrane showed that it had not been the seat of inflammation. The same view disclosed a remarkable appearance of the areolar tissue of the anterior mediastinum, which was distended with air, as if artificially inflated; and as it overlapped the base of the heart it was evident that it must have been compressed by this organ during its forward impulse, so as to cause the crackling sound heard during life.

On opening the sac of the pericardium, the right auricle and ventricle were found distended (the former very much so); the auricle contained a large coagulum of very dark blood (of a tarry colour), in which were scattered numerous globules of air. The ventricle contained a smaller quantity of dark blood, and a fibrinous polypus of apparently some standing, granular in its fracture, and soft and semi-fluid in the centre.

The valves of the heart were healthy. The left lung was much congested, and was infiltrated throughout its extent with grey tubercle, as was also the upper lobe of the right. Nothing else worthy of note was observed during this dissection.

This was evidently a case of acute phthisis, in which the obstruction to the pulmonary circulation had probably produced the great accumulation of blood in the right side of the heart, and the polypus which was found in the right ventricle. How the air was introduced into the mediastinum and right cavities of the heart (the only situations in which it was found), I am unable to say; but I have no doubt whatever as to its being the cause of the physical sign which led to the diagnosis of pericarditis, corroborated as it seemed to be by the rational symptoms.

Case of Ramolissement of the Brain. By SAMUEL G. WILMOT, M.D., one of the Surgeons to Dr. Steevens's Hospital.

THE obscurity in which diseases of the brain are involved, and the frequent difficulty of connecting with any particular morbid lesion a special train of symptoms, render it incumbent upon every one to record whatever circumstances relative to these diseases he may become acquainted with. The following case, invested as it is with so many points of interest and of peculiarity, was a private one of Dr. Croker's, in which I was merely called upon to institute an autopsical examination; he has, however, most kindly permitted me to turn it to the best account. It is to be regretted that the history of this case is not fuller and more complete, but it is to be ascribed to the fact, that Dr. Croker was not in attendance during the first and longest part of the child's illness, having been called in only when the symptoms began to assume a formidable aspect; we were obliged, therefore, to seek for the circumstances connected with the

early history of the case in another source, from whence we drew but few satisfactory particulars. For the accuracy of the *post mortem* details I can vouch, corroborated as they were by Dr. Croker, in whose presence I made the examination.

A little girl, aged eighteen months, always of full appearance and stout, of lively manner, was healthy previously to the winter of 1847–8, when she was seized with a cough which was invariably renewed by taking her out in cold weather; each repetition of her cough was ushered in with a good deal of bronchitis. In the succeeding summer, having been removed to the sea-side, her cough entirely ceased. September last, upon being brought back to town her cough returned; at this time there were mucous râles audible over the chest; they yielded, however, to mild treatment, in conjunction with occasional hippo emetics; more or less cough, however, continued. At Christmas a spasmodic character was superadded to the cough, which became dry: the paroxysms invariably seized her at night. During the winter her face was observed to be somewhat livid. For the last four months before her death she rebelled against solid food, but drank with avidity, after which she sometimes vomited. Bowels generally regular. Teething was accomplished quickly, and without any concurrent disturbance, except a diarrhœa which lasted for a short time.

On the 4th of May, Dr. Croker, for the first time, saw the case. The child then laboured under acute inflammation of the lungs and some cerebral affection, evidenced by slight twitching of the muscles of the face, strabismus, and occasional convulsive actions. There was in addition violent cardiac disturbance. The appropriate remedial agents were directed towards the pulmonary and cerebral affections, and a belladonna plaster applied over the heart. On the 13th of May the child died.

Autopsy. Head.—On raising the calvarium and removing the dura mater, the longitudinal sinus, with its contributory veins, were found to be filled with either pure fibrine or with solid coagulated blood, which gave them a remarkably firm, resisting feel. The brain appeared increased in size, being seemingly too large for the cavity of the cranium, and was everywhere morbidly soft. The anterior lobes, particularly the right, presented the following very striking and anomalous appearances. Beneath the arachnoid membrane, covering their superior part, a thin layer of blood was extravasated, and over, and for some extent around this, the blood-vessels were distended to their fullest degree with fibrine, being thus completely clogged; many of them were double the thickness of whipcord, and were nearly incompressible. When a transverse section of the anterior lobes, from above downwards, was made, the substance of the brain was found to be completely disorganized, being reduced to almost the fluid state; blood, and apparently some pus, were blended through it. The appearance presented to the eye might be aptly compared to raspberries bruised through cream. Some arteries obliterated with fibrine could be seen passing through this softened mass.

Chest.—Upon raising the sternum the pericardium was seen to be distended with serum, and slight adhesions, not of recent date, united the left side of the bag with the corresponding lung. The right lung was extensively emphysematous, and its posterior inferior lobe presented the characters of the first stage of pneumonia. The left lung was less emphysematous, but its posterior portion was completely hepatized.

Abdomen.—The viscera of this cavity were for the most part healthy, with the exception of the liver, which felt firmer than usual, and contained much bile.

The *post mortem* indications in the lungs in this case fully prove the supervention of recent acute pneumonia upon a pre-existing chronic affection, and show the correctness of the diagnosis. It is in the brain, however, which furnishes so well-marked an example of ramollissement, that are to be found morbid anatomical features of high interest, the causes of which give no small scope to pathological reasoning. Two opinions are maintained relative to the pathology of ramollissement of the brain: first, that it results from inflammation of its substance; second, from obliteration of its vessels. The latter view was particularly taken by the French pathologists, amongst whom was M. Rostan, who compared the disease to gangrena senilis. Abercrombie considers that it arises from both causes, and looks upon it as simple gangrene resulting in the one case from intensity of the inflammatory process, in the other, from a deficient supply of blood to the part. Carswell also recognises both these conditions as causes of ramollissement. Andral appears to indirectly coincide with the same opinions. In the case before us the substance of the brain was diffluent almost to liquefaction; blood was thickly interspersed through it, and many of the vessels were obliterated with fibrine. Two questions then at once suggest themselves:—First, Which of the acknowledged causes of softening produced the change in this instance? Second, If it be determined that the morbid condition was due to the obliteration of the vessels, and not to inflammation of the substance of the brain, what was the cause of those fibrinous plugs which rendered the vessels impervious? Judging from the early age of the patient, and the circumstance that softening from obliteration is generally considered to be peculiar to advanced life, when it would appear to arise from ossification of the arteries, we would be inclined to attribute the morbid condition of the brain to previous inflammation of its structure, and the state of the vessels as also a result of the same. But this presumption is at first weakened by the consideration that the history of the case affords no evidence of inflammation of an acute character having ever existed, and is finally negatived by the fact, that this state of vessels is an occurrence I have never known to result from inflammation of the brain.

Indeed Carswell, after stating that softening of the brain from obliteration of the arteries occurs only in advanced life, says, that the distinguishing physical feature between softening, the result of obliteration of vessels, and that from inflammation, is alone to be

found in the condition of the vessels. And Watson lays down the following negative proposition, viz.: "If we find the arteries impervious we conclude that the softening has not been inflammatory." In addition to these arguments it may be mentioned that the presence of inflammatory products through the diseased mass was not very satisfactorily ascertained; they must have been very scanty. Since, then, we have sufficient data upon which to reject the opinion that these remarkable morbid appearances originated in inflammation of the brain, we must only seek the cause of softening in the other condition that can produce it, viz., obliteration of arteries: we are compelled, therefore, to find an answer to the second question put. The only rational mode of accounting for those fibrinous masses which rendered the vessels impervious, that I can find, is upon the supposition of inflammation of their lining membrane, which produced, as it always does in other parts, first, simple coagulation of blood, and then deposition of pure fibrine; the vessels thus becoming impervious, and the brain, as a necessary consequence, dying from insufficient nourishment. If this view be correct, we are furnished in the present case with a cause of ramollissement of the brain, of which the high authorities previously quoted seem not to have taken cognizance. We will also be able to establish a more complete analogy between this disease and dry gangrene, which is now admitted to arise from two distinct states of the arteries, one from inflammation of the internal coat, which may occur in the earlier periods of life; the other from ossification, which is confined to the latter part of life. In the brain of the present case there was an additional cause of disorganization in a corresponding impervious state of many of the veins by the very same substance. The extravasation of the blood can be readily accounted for by the rupture of some of the unobliterated vessels in consequence of the increased impetus and undue pressure of the blood from the impervious state of the collateral branches, assisted, probably, by the violent fits of coughing to which the little patient was latterly subject, and the loss of support to the vessels by the softened state of the parts.

Case of ruptured Intestine; with Observations on the Cause of Pain in Perforation of serous Membranes. By Maurice Henry Collis, M. B., L. R. C. S.

A groom of about thirty-five years of age, of spare make and temperate habit, was brought into hospital the second day after receiving a kick in the abdomen from a horse, labouring apparently under symptoms of incipient peritonitis; that is to say, he had a rapid pulse, not, however very small or wiry; headach, nausea, foul tongue, and diminished secretions; the belly was both tender and painful, distended, clear on percussion, except at the spot where he had received the blow (about an inch above the left internal ring). The constitutional symptoms disappeared under the ordinary antiphlogistic treatment; but the abdomen remained swollen and tympanitic, except in the one spot, where he felt a constant dull pain. The diagnosis made was rupture

of the mucous and muscular coats of the intestine, and effusion of the bowel contents between the layers of the mesentery, whence the gas made its way into the cavity of the peritonæum, while the solid fæces remained there, giving the dull sound, and forming a centre from which inflammation might spread at any moment. The prognosis was favourable, provided the patient could be induced to remain perfectly quiet. Patients with such an affection suppose themselves well long before they are safe from fatal peritonitis. A case exactly similar to this was brought into St. Louis, in 1823, and terminated fatally from some exertion on the part of the patient. M. Jobert, who kindly gave me the particulars, found, on dissection, a small recently formed sac of pyogenic membrane round the effused fæces, which were hard and solid; the peritonæum in the neighbourhood was in a state of subacute inflammation, and from a rent in it some of the fæces had escaped, giving rise to the general peritonitis which proved fatal. In another patient, who had recovered from a similar accident, and died subsequently from phthisis, the small intestine was found slightly contracted at the seat of the injury, and bound to the side, just above the crest of the ilium, by a white fibrous band. The treatment in all cases should be perfect rest, a mild diet, and to watch the dull spot, and leech it when painful. In the present case this plan was successful; the air disappearing very soon, and the local dulness and pain being removed in about six weeks. The mode of cure consists in the formation of a simple fibrous membrane round the fæces, which being absorbent, as all primary membranes are, removes all that can be absorbed, and then secretes pus, and floats the rest into the intestine, or else, contracting round it, pushes it in and closes up the opening.

There is one point connected with this case of considerable interest generally, viz., the immediate great pain and inflammation on the admission of air into a serous cavity. Of the *modus operandi* of air in causing inflammation, I have never heard any explanation; on the contrary, most persons express surprise at so mild an agent proving so irritating to serous and other membranes; it is, therefore, with some diffidence that I suggest the simple explanation, that it is the nature of air, especially when warm, to abstract moisture, until saturated, from all substances with which it is in contact. Moisture is necessary to the vitality of all tissues, both animal and vegetable, and increased evaporation must be met by increased secretion or exhalation; now healthy serous membranes naturally secrete but little fluid, and an extraordinary call for it produces excessive subserous vascularity, exhalation of the more fluid parts of the blood, in a word, inflammation; and that with a rapidity so great, that we cannot say that it spreads from the injured spot where perforation has taken place. This effect we can see in the case of an ulcer, from which the protective pus has been wiped, in cuticular and mucous membranes from which the epidermis or epithelium has been removed, and in those mucous membranes which have little or no epithelium, but where its place is supplied either by exhalation, as in the minute bronchi and pul-

monary vesicles, or by special secretion, as in the conjunctiva. In all these, when they are not protected from excessive evaporation, dryness and inflammation are the result of the simple law of nature by which air attracts to itself all watery vapour to which it has access. The pain, also, in cases of perforation of the pleura, is similar to that of acute dry pleuritis, and in those cases where the pleura is protected by false membranes, or by purulent secretion, it is never so severe. Perforation or rupture of the uterus and bladder is seldom attended with the violent pain that accompanies lesions of the intestines; most likely from the absence of air in such injuries. There are, in fact, numerous phenomena, both of health and disease, which depend on this simple law, the study of which would yield us much profit; such as the formation of cuticle and epithelium, the secretion of pus, and endless forms and varieties of inflammation.

History of a Case of Cancer of the Brain. By Henry Carline, Assistant Surgeon, 6th Dragoon Guards.

J. E——, aged nineteen years and seven months, was first admitted into hospital August 28, 1846. He is a native of Shrewsbury, a bricklayer by trade, five feet seven inches and a quarter high, with dark complexion, brown hair, and hazel eyes, ten months' service, robust and healthy-looking, and says that he has always enjoyed good health. He has used mercury once for a protracted attack of venereal affection. He now complains of debility of both knees, which he says renders him unable to stand for any length of time, but it is unattended with pain or swelling, and has been coming on gradually; pulse regular; tongue clean and moist. He was ordered: friction with ammonia liniment twice a day; cathartic pills at bed-time, and cathartic draught in the morning.

The cathartics and friction were persevered in, and he was discharged quite well on the ninth day. He does not appear to have been again admitted into hospital until the 8th September, 1848, although, while on detachment at Belfast, he repeatedly complained of severe pain in the head, but the existence of which was doubted, as neither the pulse, the tongue, nor derangement of any function indicated its existence. On this day he was re-admitted, complaining of pain in the temples and forehead; pulse regular; tongue clean; free from nausea or internal pain; bowels confined. Aperients were used; cold applied to forehead, and blisters to neck.

20th. He says the pain in the forehead continues to trouble him during the night; pulse regular; skin cool; tongue clean and moist, free from thirst; blisters frequently repeated to occiput, forehead, and temples; cathartics occasionally; tonics and alteratives. On the 26th of September he was free from headach, and continued so up to the 9th October, when he was dismissed from hospital.

November 22nd. He was re-admitted this morning. He again complains of frequent attacks of acute pain, coming on at intervals, and apparently situated in the frontal sinuses; pulse natural;

tongue clean and moist; bowels free; no nausea or thirst. He was treated with aperients, alteratives, tonics, and blisters.

December 4th. The pupil of the left eye is considerably dilated, and does not contract freely when tried in the usual way. The eye-lid droops so as nearly to cover the eye, and there is slight lachrymation, but no pain present; complains of dimness of sight, and of seeing double; free from headach; digestive functions apparently healthy and regular; blisters continued, and mercury used.

6th. The left pupil continues dilated, and vision of the left eye double, and dim; the eye-ball is also slightly prominent; there is considerable lachrymation, but no pain, redness, or intolerance of light; drooping of the eye-lid is less; gums tender; cathartics, blisters, and mercury continued.

22nd. The pupil has now nearly acquired the natural size, and there is very little drooping of the eye-lid; gums tender.

26th. He complains this morning of severe aching pain, commencing in the left eye, and extending to the forehead and left temple.

29th. The pupil is now quite natural, and vision is perfect; but he still complains of pain in both eyes, moving to the forehead, particularly during the night; pulse regular; tongue furred; gums sore; bowels confined; mercury omitted; blisters applied to neck; and had aperients.

30th. Blisters rose well; pain was not so severe last night as formerly, but he says that his eyes are very painful this morning; pulse regular; tongue slightly furred; bowels moved twice this morning. Ordered two grains of the iodide of iron twice daily.

January 5, 1849. He complains of having had severe and shooting pains above the left eye-brow, on the left temple, extending down along the cheek, causing him to pass a very restless night, and which still continues very severe; pulse 90, and small; tongue furred in the centre; bowels confined; leeches applied to the temple; cathartics and sesquioxide of iron substituted for the iodide; anodyne draughts at night; and friction with camphorated mercurial ointment on forehead.

14th. He has passed a good night; and is free from pain.

29th. He remained free from pain, in a great measure, until the end of the month, when he had slight attacks of pain at 10 P. M., and which continued for half an hour, and he would then continue free from it until the next night. Disulphate of quina gr. ii., twice a day, and anodyne draught continued at bed time.

February 1st. He is free from complaint, but is very weak.

11th. He has not had any return of pain, and is gaining strength very fast; functions natural; appetite very good; the quina to be continued, but the anodyne omitted.

17th. He is returned as convalescent, and continued so until March 7th.

He now complains of great pain in the left eye, which is more prominent than the right; the pupil acts very sluggishly, and is much larger than natural; there also is deafness of the left ear, and

loss of smell; pulse and skin are natural; tongue very clean; bowels moved regularly, and evacuations healthy-looking. Cupped on neck, which greatly relieved him; seton through neck: no medicine.

8th. The pains are much less severe; he was ordered a scruple of sesquioxide of iron, and ten grains of jalap, twice daily.

10th. He had an interval of two hours last night free from pain, and when it returned it was much less severe; the seton discharges freely; thinks that the quina agrees much better with him than the iron, it is, therefore, repeated as before, and a draught containing morphia at night.

14th. The pain has continued to intermit at irregular intervals, since last report, the intermission sometimes continuing for three or four hours, but he continues much the same in other respects; seton discharges well. To have two grains of sulphate of quina every sixth hour; the morphia draught to be continued.

April 13th. He has continued to improve daily, the intervals of pain being much longer, and the pain subsiding in thirty or forty minutes after taking the quina; seton has discharged freely throughout; pulse, skin, and tongue, are natural; bowels regular, and evacuations healthy-looking; appetite very good.

15th. He continued much the same until this morning, when he stated that he could not sleep at all during the night, from the severity of the pain in the left half of the forehead, temple, and front of the left ear; he speaks with difficulty, and does not answer questions readily, and the countenance is of a pale leaden hue; the left eye is more prominent; lips blanched; pulse 60, very small and weak; skin below natural temperature, but not moist. To have a draught with twenty drops of the stronger water of ammonia in an ounce of camphor mixture. 4, P. M. He is now asleep, and breathing quite easy; pulse 60, very small and feeble; skin natural temperature; he has not taken anything to-day since his tea at breakfast-time, and his beer at dinner. No medicine; half an ounce of arrow-root and an ounce of wine immediately, and to be repeated in four hours. 6, P. M. He awoke, and took his arrow-root and wine, and shortly afterwards fell asleep again. He now lies on his left side; breathing quite easy, but occasional convulsive twitches of the left upper eye-lid occur.

16th. He passed a good night, and feels tolerably easy; countenance is much better; pulse 60, very small, and very easily compressed; skin rather cold, but free from moisture; tongue clean; bowels regular. Continue his arrow-root and wine every four hours. Morning.—He has been sleeping the greater part of the morning, and is so now; there are not any convulsive twitches of the left upper eye-lid. Evening.—He has been easy throughout the day, and continues so now, but is the same in other respects.

17th. States that he had pain for a short time once during the night, but is quite easy now; he speaks as usual, and the cadaverous appearance has nearly disappeared; left eye is not so prominent, and lips are nearly natural; pulse 60, very small and weak; skin is

nearly of its natural temperature; continue arrow-root and wine. Morning.—He has continued quite easy throughout the morning; seton discharges very copiously. Evening.—He has not had any return of pain, and appears easy, but very restless, and requires rather to be roused before he answers any questions; pulse and skin are the same as in the morning.

18th. Complains of sickness at stomach, with occasional vomiting of brown grumous fluid; pulse 60, very small and weak; skin slightly below natural temperature; tongue clean but flabby-looking; bowels not moved since the 16th inst.; slight deafness has returned, and dulness. A cathartic enema, with castor oil and oil of turpentine, was administered, and a bottle of hot water to the feet. Continue arrow-root and wine every four hours. Morning.—The injection brought away one very copious dark brown scybalous evacuation; he has had his arrow-root and wine, and no return of sickness or vomiting; pulse continues very weak and small, and skin below natural heat. Evening.—He lies on his left side, fast asleep; breathing is easy and quite natural; he awoke at 4 P. M., and took his arrow-root and wine, which he appears to enjoy very much.

19th. He slept throughout the greater part of the night, and was, in a great measure, free from pain; heart's action is very feeble, and pulse exceedingly small; skin is of its natural heat; tongue tolerably clean, but is flabby-looking; bowels moved once copiously; the evacuation was healthy. No medicine; continue extra diet every four hours. Evening.—He is reported as having been tolerably quiet throughout the greater part of the day, but he is sleeping quite quiet now, and lies on his left side, breathing naturally.

20th. Passed a very good night, and had slight return of pain only early this morning; pulse 60, more full and soft; skin natural temperature; tongue clean and less flabby-looking; bowels regular. Continue nourishment.

21st. He has been quite easy since last report, with the exception of half an hour last evening, when he had slight pain; pulse 60, more full and less weak; skin natural; tongue clean; bowels moved once, evacuation healthy-looking. Continue nourishment.

22nd. He is free from pain, and had only one slight return of it since yesterday, and appears much better in other respects; one healthy evacuation since yesterday morning. Continue nourishment.

23rd. States that he has had two very slight attacks of pain, one last evening and the other this morning; pulse 60, tolerably full and soft; skin natural; tongue clean, but rather flabby-looking; bowels moved once; seton discharges copiously. Continue nourishment.

24th. Passed a good night, and feels quite easy, no return of pain since last report; bowels moved once; appetite very good; no medicine: chops and bread.

26th. He has continued tolerably free from pain since last report; seton discharges freely; bowels regular.

29th. The seton has been withdrawn (the sinus is obliterated, and the punctures are all but healed up), and he is proposed for invaliding at this inspection, as labouring under nervous affections dependent upon some organic disease of the brain and left optic nerve.

May 11th. This man has continued much in the same state, i. e. countenance dull, and of a pale leaden hue; defective and double vision of the left eye, which is more prominent than the right, and pupil much dilated; almost total deafness of left ear, loss of smell, defective utterance, mouth somewhat distorted, and occasional slight pain in the left eye, left half of the forehead, temple, and down the left cheek in front of the ear, with a pulse seldom varying from 60, very small, and exceedingly compressible; skin slightly below natural temperature, but not moist; tongue clean, but flabby-looking and pale; bowels tolerably regular, and evacuations healthy. At 10 this morning he became exceedingly restless, tossing his head from one side of the pillow to the other. He was comatose in less than half an hour, and expired without a struggle in three hours and a half, at half-past 1, P. M.

The *post mortem* examination was made twenty-one hours after death. The body was very stout, muscular, and extremely fat; it was in a rapid state of decomposition. On removing the calvarium, there was general congestion of the vessels of the surface; the upper portion of the membranes having been removed, the left anterior lobe of the brain was found firmly adherent to them, corresponding to the left orbital plate, left wing of the sphenoid, and anterior portion of the left temporal bones; the greater portion of the base of the anterior, the entire of the middle, and part of the posterior lobes, left side, were in the third stage of softening, being as fluid as cream. This softening extended upwards to a line on a level with the roof of the lateral ventricle; sprouting from the centre of this was a firm cancerous mass(*a*), about the size and shape of a fig, and which pressed upon the *left optic nerve*, and the *supra-orbital branch of the fifth pair*, partly enveloping them. The floor of the left lateral ventricle was healthy, but both were filled with transparent serum; the *olfactory nerves were degenerated into a very soft, reddish-brown, pulpy mass*, and

(*a*) The tumour was of a dense consistence, exuding a creamy fluid when cut or scraped; it was of a grayish-yellow colour, exhibiting in one part minute capillary injection. A thin section examined under the microscope with a power of 250 linear, presented a fibrous structure, arranged in striæ, imbedded in which were nucleated corpuscles (cancer-cells), and several compound granular cells, which were rendered much more transparent on the addition of acetic acid. The creamy fluid scraped from the surface of the tumour contained numerous minute granules, compound granular cells, and nucleated corpuscles.

I was assisted in the *post mortem* examination by my friend, Dr. Neligan, who saw the patient with me several times during his illness; and I am also indebted to him for the account of the microscopic appearance of the tumour.

the anterior lobes of the brain were firmly adherent together: the cerebellum was perfectly healthy. On removing the bony plate of the left orbit, a large quantity of adipose matter was found enveloping the muscles of the eye.

Chest.—The lungs were pale-looking, and emphysematous; the heart had large deposits of fat on the surface, but it was perfectly healthy.

Abdomen.—Between the skin and muscles of the abdomen there was a layer of fat, at least one inch in thickness; the viscera were loaded with fat, but the whole of them were perfectly healthy.

THE DUBLIN

QUARTERLY JOURNAL

OF

MEDICAL SCIENCE.

NOVEMBER 1, 1849.

PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*On the Law of Mortality in Phthisis, and the Influence of Moral Causes in producing the Disease.* By JAMES F. DUNCAN, M. D., Fellow of the College of Physicians, and Physician in Ordinary to Sir P. Dun's Hospital, &c.

ANY person who will take the trouble of reading with attention the successive Reports which have been published by the Registrar-General of England since the institution of that office, cannot fail to have two things deeply impressed upon his mind: the first is, the extreme degree of care employed in the compilation of the tables to which the Reports refer, as evidenced by the elaborate corrections introduced for the elimination of errors; and the second is, the extraordinary fact that each successive year confirms, in an astonishing manner, the results of those that preceded it.

It is scarcely necessary for me to remark the vast importance of these records, both in a national and in a scientific

point of view. To the statesman engaged in the study of political economy, they are important, because they bear directly upon all questions connected with population, the source of a nation's greatness, and the evidence of its prosperity. To the philosophical physician they are equally important, throwing a light upon disease which is nowhere else to be obtained. As official documents, bearing upon the interesting subject of statistics, they possess a value which it is impossible that any private researches, however carefully prepared, can ever obtain. In the first place, when a private individual sets about collecting information of this kind, and publishes the result to the world, we have to be satisfied of the motives which induced him to commence the undertaking before we can yield implicit credence to his statements. We naturally suspect that he has had some preconceived theory to support, and that this has, however unconsciously, coloured his conclusions. We require further to be acquainted with the opportunities he has enjoyed for collecting the information sought to be communicated, his habits of observation, and, above all, his veracity. All these are matters which it is extremely difficult to render so apparent as to overcome the scepticism that naturally attaches to conclusions drawn from such premises.

With a public officer the case is different; the nature of his appointment sufficiently accounts for his engaging in the dry details of figures, of which all statistical researches are composed; and the absence of any motive to alter the returns affords a strong probability that they are impartially recorded(*a*).

But there is another reason, in addition to the foregoing, which stamps peculiar value upon these official documents, and

(*a*) For a similar reason, the records of medical cases from private practice are always less satisfactory than those which are drawn from clinical observation in public hospitals, where a class of intelligent pupils has witnessed their progress, observed the treatment, and noted the result. The publicity of the latter is a conclusive argument in favour of the fairness of the reports subsequently presented to the world.

that is, the great extent of country over which they are spread. In all calculations of this kind it is well known that the liability to error diminishes inversely with the magnitude of the numbers treated of; in other words, the larger the field of observation, the greater the accuracy.

Now, it is obvious that it is impossible for a single individual to collect, with all the exertions he may bring to bear upon the subject, a mass of facts capable of the slightest comparison with that which have been accumulated by the Registrar-General, assisted by his numerous staff throughout the country; and it will be shown a little farther on, that, making every allowance for the veracity of private collectors, their habits of observation and accuracy, still differences will naturally appear upon the face of their registers, arising from the very circumstance of their labours being confined to limited districts, where local causes exercise peculiar disturbing influences.

I have already said that no sufficient motive, such as previous impressions, can be supposed capable of acting upon a public officer, so as to induce him to alter the returns to suit his peculiar views; in the case before us, however, such a supposition is not only improbable, but it is absolutely impossible. The extent of machinery employed in the preparation of the tables is sufficient to prevent its occurrence, because, as the gross returns consist of innumerable entries from detached localities, transmitted through various hands, it is necessary either to suppose that a concert of the most intricate kind is maintained between these subordinates and the Registrar-General himself, to produce the required result, or to admit the strict impartiality with which the whole proceeding is conducted. The difficulty of attempting to give a peculiar complexion to any part of these returns, added to the total absence of all motive for such a proceeding, renders the idea evidently absurd.

And what confirms this still more is the circumstance to

which I have previously alluded, that the returns in successive years continue to give similar results to those which were first published; a fact that strongly proves the accuracy with which they have been drawn up, and the absence of all intentional perversion in the entries. For, unless we suppose the subordinate returns entirely disregarded, and a fraudulent concoction of imaginary figures substituted in their place, it is manifestly inconceivable that a systematic design of altering, in ever so slight a degree, the documents, could be carried on year after year, and yet the entire result continue to tell the same story.

I have dwelt upon this point more than may seem necessary to many readers, because I feel that, in drawing conclusions from these tables, everything depends upon the perfect accuracy and the strict impartiality with which they have been drawn up. That errors have crept into them, notwithstanding all the care taken to prevent their occurrence, can scarcely be questioned; but they are errors arising from the imperfection of human knowledge, and not from any wilful perversion on the part of those engaged in preparing them; and what is more, these very errors, in the nature of things, tend to neutralize one another; for, if in any one instance, a case of bronchitis has been entered by mistake for consumption, there is an equal probability, the error being unintentional, that a case of consumption has been elsewhere set down for bronchitis.

The Report of the Irish Census Commissioners for 1841, with Mr. Wilde's Analysis of the Mortality Tables, is a public document similar in kind to those of the Registrar-General of England, and of equal, if not greater, importance. The high scientific character of the gentlemen employed on the work is a sufficient guarantee for the learning and ability displayed in its preparation. Having enjoyed the advantage of the previous publication of some of the English Reports, to serve as models for their guidance, they have rightly endeavoured to equal, in accuracy and in detail, their great statistical rivals. And in some respects they may be said even to have excelled them.

But in two points, on the other hand, it must be confessed, that the Irish records labour under a great disadvantage, as contrasted with the English, though the fault in no way rested with the distinguished individual who compiled them.

The first of these was the including a period of ten years in the inquiry, instead of one, as is the case in England, whereby many facts, especially in the earlier years, escaped record altogether; and the second was the absence of all provision for their subsequent repetition. Had these valuable inquiries been pursued annually from that time up to the present, during which the country has been undergoing the most afflictive dispensations of famine and pestilence, what an amount of important and authentic information would they have contained! With what confidence might our senators and statesmen have turned to their unquestionable, though unpalatable truths, and, instead of vague assertions and conflicting opinions, the naked facts would have spoken in the plain but startling language of figures, till the alarmist on the one hand, and the sceptic on the other, had learned to submit in silence to their decision.

Now, it is a curious and instructive fact, that the very same results which appear in the Registrar-General's reports, in reference to the mortality of various diseases, appear also in those drawn up by Mr. Wilde, as I shall presently take occasion to point out; with this exception, that in the latter the proportion of the whole to the population is considerably less than in the former; a fact accounted for by the defective registration as to the earlier years of the decade, by the removal of families during the interval, who alone were capable of giving the information; the voluntary mode in which the statements were furnished, and the facility with which such matters are forgotten a short time subsequent to the event. But as these causes are likely to operate with considerable uniformity, affecting equally the details of each sex, of all ages, and of every disease, it is easy to understand that the general effect of

these omissions in the register must be to leave the relative proportion pretty much the same as it would have been had no such omissions taken place.

Now the remarkable circumstance that each of these records, as they have successively appeared, exhibits a striking uniformity in the relative proportion of deaths produced by each disease, as compared with the population,—an uniformity not limited merely to the aggregate numbers, but extending also to each of the sexes, and to the different periods of life,—forces upon us the conviction that the fatal event which terminates existence does not occur, as was formerly supposed, in an irregular, uncertain manner, by a sort of accident, but is regulated by a fixed or settled principle, which may be called the "law of mortality," and which produces this unexpected harmony of results. Of course, in saying that the records of death exhibit a striking uniformity of results, I exclude from the consideration those which are produced by epidemic causes, and which are subject to periodic or peculiar variation. The former may be compared, from their stationary character, to the fixed stars in astronomy, which never appear to change their position to one another or to the spectator; while the latter resemble the planets, or, perhaps more properly, the comets of our system, and which obey a distinct law of their own.

But in using the expression "law of mortality," though not now introduced for the first time, several objections naturally suggest themselves to the mind. The first is, as to the propriety of the term. It is evidently based upon an assumed analogy between the phenomena of the material universe and of animated nature. Now there is this remarkable difference between them, that, while the facts from which the laws of matter are deduced are universal, those which we observe in living bodies exhibit numerous exceptions. For example,—in every country where the ratio of the sexes at birth has been accurately observed, it has been found that the number of male

infants exceeds, by a marked and regular amount, that of female infants. But if we limit the inquiry to a single family, we know that this proportion does not hold good.

Similar exceptions occur in all the assumed laws connected with life: is the expression then proper under the circumstances? To this objection a double reply may be given. First, that the exceptions may be apparent only, and not real; just as we know that the planets move constantly in one direction at a uniform rate, and yet to the eye of the observer they appear at times to be stationary, and at times to be moving in a direction opposite to their natural course.

The second answer is founded upon a consideration of the nature of the principle of life, which includes the idea of a separate and independent power in each individual, which enables it to resist the influence of external agencies; for example, the power of maintaining a uniform temperature in opposition to that immediately surrounding it. Now the living principle may exist in various degrees, being stronger in some instances than in others, and consequently the power of resistance may be more effectual in certain individuals than in others. In brute matter, on the contrary, no such power of resistance can be detected, but it lies completely passive under the influence of every impression to which it is exposed. Occasional exceptions, accordingly, are the natural results of the condition of existence in the one class of subjects, and not in the other. The operation of the law is secured on the average by the strength of the controlling force being made greater than the general amount of resistance to be overcome; but the vital principle being sometimes unusually energetic accounts for the occasional exceptions.

A second objection may be taken to the expression "law of mortality," from its appearing to imply the notion of *necessity*. If the divine Creator has really implanted in our nature a property of spontaneous termination by certain diseases, according to fixed general laws, it is not only improper but im-

possible to counteract His will. If such an idea be correct, the resources of medicine are valueless, and the improvement of the healing art is impracticable. But this mistake arises from proper attention not being paid to what is really implied in the notion "law of mortality," which is neither more nor less than a *tendency* to produce a certain result if uncontrolled; just as the principle of gravity is only a *tendency* in the particles of matter to approximate with an intensity varying in proportion to their masses, which may or may not take effect according as this tendency is controlled or not. When a man places a book upon a table, he does not imagine that he is profanely interfering with the laws of nature; and similarly when a physician, by the use of medicine or otherwise, attempts to stop the progress of disease, he is so far from opposing the divine will that he is actually carrying it into effect. That the powers of medicine are not worthless, and that the healing art is really capable of improvements which may have the effect of prolonging life and diminishing sickness, are facts which no candid mind can possibly deny(*a*); but the position that disease and death are the natural results of certain fixed and general laws does not in the slightest degree interfere with the admission of their truth.

Other objections may be raised to the expression on the grounds that it is inconsistent with the doctrines of the divine foreknowledge and of special providence;—but these, being theological questions rather than medical, are not suitable for discussion on the present occasion; I shall only add, that I consider them equally capable with the former of a simple and satisfactory explanation.

I come now to what is more immediately the subject of the present paper, and that is the elucidation of the law of mortality in tubercular consumption, as established by these records. In doing so I shall faithfully detail *all* the evidence they present; but it is necessary to remark that the tables are not drawn up

(*a*) See especially Combe on the Management of Infancy.

in the same way every year, so that it is impossible to continue the statistical details in the same formulary through all the Reports to the present time. This arises from the circumstance that the compilation of these supplementary documents is optional on the part of the Registrar-General, and not obligatory; and that he naturally infers, I presume, that when a certain point has been sufficiently established by a series of observations, it would be an unjustifiable expenditure of the public funds to continue the investigation further. I mention the fact to prevent the idea being entertained that I had selected a part of the materials favourable to my own views, and omitted another portion which was opposed to them. And first, as to the relative frequency of the disease in the two sexes;—it has long been a disputed question among medical writers whether men or women were more liable to consumption; some physicians maintaining one side of this question and some the other; and a few denying that any difference in this respect existed between them.

Thus we find Dr. Briquet stating that in his wards in the Hôpital Cochin in Paris he had one-tenth more male patients than female, out of a total of 109(*a*).

Professor Reid, of St. Andrew's, states, that when he was superintendent of the Royal Infirmary of Edinburgh from 1st July, 1839, to the 1st October, 1841, there were 155 male, and only 63 female patients admitted labouring under the disease(*b*).

In the Statistical and Pathological Report of the same Institution for the years 1833, 1834, 1835, 1836, and one-half of 1837, drawn up by the late Dr. John Home, it is stated that the admissions were 185 males and 112 females during that period, the accommodation provided for the two sexes being equal(*c*).

Louis, on the contrary, tells us, that he had seventy cases of consumption in women and only fifty-seven in men under his care, in wards containing forty-eight beds equally divided

(*a*) Edin. Monthly Med. Jour. 1842, p. 621. (*b*) Ibid. p. 754.
(*c*) Edin. Med. and Surg. Jour., vol. xlix. p. 6.

between the sexes(*a*); and that this fact, which leads to the idea that females are more liable to the disease than males, is confirmed by another, which exactly harmonizes with it, viz., that of forty other individuals carried off by various chronic diseases, and found in a tuberculous condition, twenty-five were females and only fifteen males. A still stronger statement in support of his opinion is quoted in the same work, on the authority of M. Benoiston de Chateauneuf(*b*), viz., that out of 43,010 patients admitted into three of the Parisian hospitals between 1821 and 1836, 1554 died of phthisis, namely, 754 men out of 26,055, and 809 women out of 16,955; which shows an immense excess on the part of females, when compared with the gross numbers admitted.

The third opinion is maintained by Sir James Clark in his work upon consumption and scrofula. After giving, in a tabular form, a number of statistical returns from various sources, which contradict each other in a remarkable manner, he concludes by stating his belief that, if the subject were sifted accurately, no real difference between the sexes would be detected. In drawing this conclusion, however, he has evidently fallen into the mistake of supposing that the male population living at any time exceeds the female. His words are these(*c*): "The constant equal relation of the first seven numbers is certainly most remarkable, and appears to warrant the conclusion that for every eight or nine females, ten males die phthisical, *which is very nearly the relative numbers of the sexes;* it therefore goes far to prove that the sexes are equally liable to consumption." Any one who will take the trouble of looking at any of the Census returns will easily satisfy himself that this is a mistake, and that there is always, in every settled country, a distinct excess of females over males. It is not improbable that he may have been inadvertently led into this mistake from a knowledge

(*a*) Louis on Phthisis, Sydenham edition, p. 479. (*b*) Ibid. p. 480.
(*c*) Clark on Consumption and Scrofula, ed. 1835, p. 184.

of the fact to which I have already alluded, that there is always an excess of male infants in the number actually born, and that he may have supposed that the same proportion which holds good at birth continued afterwards. But this is not the case. An increased mortality reverses the relative numbers living. M'Culloch, in his Statistics of the British Empire(*a*) attributes the preponderance of female life to the greater risks and casualties that men encounter in the naval or military service, in their peculiar employments, in their greater disposition to emigrate, &c. ; but I have elsewhere shown(*b*) that this is not the true explanation of the difference, inasmuch as *it is produced by causes operating in infancy*, and before these casualties can possibly take effect.

The following are the returns of the deaths from phthisis, in the several Reports of the Registrar-General for England:

	Males.	Females.
1837, First Report(*c*), .	12,968	14,786
1838, Second do., .	27,935	31,090
1839, Third do., .	28,106	31,453
1840, Fourth do., .	24,519	28,168
1841, Fifth do.(*d*), .	24,329	27,937
1842, Sixth do.(*d*), .	24,048	28,098

These numbers clearly prove that in England, at least, a greater number of females die of consumption annually than males; but to form a perfect comparison of the two sexes it is necessary to calculate the proportion in reference to the number of each actually living. I shall confine myself to one of the years only, and shall select 1838, because the population for the middle of that year is furnished by the Registrar-General

(*a*) Edit. 1837, vol. i. p. 410.

(*b*) Medical Statistics,—their Force and Fallacies. M'Glashan, Dublin, 1847.

(*c*) For half year only.

(*d*) The deaths in the metropolitan districts are excluded from these returns, for what reason I know not.

himself(*a*), who computes it to have been 7,668,245 males, and 7,885,615 females. This would make the proportionate mortality in that year to have amounted to 36 men and 39 women in every 10,000.

According to the Irish Census for 1841, there died of consumption in ten years, 63,635 males and 71,955 females.

I have already alluded to the circumstance that the registration of deaths in Ireland given in this Census is defective, particularly for the earlier years of the period included, owing to the mode in which the returns were collected, so that the absolute mortality appears greatly below that of the sister kingdom, while the relative proportion of the sexes is as nearly as possible the same; the ratio, calculated in a similar manner being 15·8 males to 17·3 females, in every 10,000 of the population. This result is interesting, not only as corroborating the conclusion already arrived at from the English records, but as giving countenance to the idea that any improvement in practical medicine which may have the effect of diminishing the mortality of consumption, either in the way of prophylaxis or of cure, may still operate in such a way as not to alter materially the relative liability to the complaint.

Assuming, then, the general position, that, when a whole country is made the subject of examination (for when the field is limited we shall see presently the rule does not hold), the female sex is more prone to be attacked, it becomes an interesting question to consider the circumstances that produce such a result.

So far as I am aware, only three explanations have been proposed to account for the difference. The first is that of Mr. Farr, the talented author of the tables elucidating the reports of the Registrar-General, and he attributes it to the unnatural practice of tight lacing, which prevails so commonly among females(*b*). It is scarcely necessary to say, that I fully

(*a*) Report, page 70, small ed. (*b*) Second Report, 8vo. ed, p. 73.

agree with Mr. Farr as to the injurious effects produced by the practice he alludes to, and in the opinion that "girls have no more need of artificial bones and bandages than boys;" but still I think it will appear, upon reflection, that this cause, how injurious soever it may be in other respects, can have very little effect, if any, in producing phthisis, from the fact that the disproportion between the sexes is not greater. Men never wear stays, women invariably do;—if the habit had any tendency to produce consumption, the disease should be almost unknown in the one sex, and almost universal in the other. The next explanation proposed is that which refers it to the habit of exposing the upper part of the chest, which prevails among women, but not among men. The fact that the development of tubercle first occurs in this part of the chest appears at first sight to lend some countenance to this hypothesis; but, not to mention other objections that might be raised to this view, it is sufficient to state that the argument which has been urged against the former explanation with such success, tells with equal force against this.

The third explanation refers the difference to the domestic life of females, as contrasted with the out-door employments that prevail among men. Confined to the house, either voluntarily or by necessity, the air they breathe is less pure, the play of all the organs less vigorous, the vital changes take place with less intensity, and the exhilarating influences of solar light and heat are less felt by them than by the other sex, whose occupations place them in circumstances the opposite of those just mentioned. That their condition in this respect exercises an injurious influence over them can scarcely, I think, be questioned. That it may also tend to induce the disease under consideration is extremely probable; but it must not for a moment be lost sight of, that the constitution of the female has been admirably contrived for the duties she has to fulfil; and that consequently a domestic life, with its attendant confinement, is

calculated to be less injurious to her than to man himself, whose physical development is greater, and whose habits are more active. For these reasons I am not disposed to place much reliance upon this explanation, although I admit that it is entitled to some consideration.

Before proceeding to state what is my own opinion of the cause of this difference, I think it right to call attention to a point that I believe has not been noticed by any previous writer upon this subject, but which is plainly brought out by the tables under consideration, and that is, that while females are more liable to the disease when the entire population of a country is taken into account, males, on the contrary, are more liable when the population of a city only is considered: in other words, residence in a rural district has a greater tendency to develope phthisis in females than in males; residence in a town district has a greater tendency to develope phthisis in males than in females. For the purpose of contrasting the diseases that prevail in towns and country districts, the Registrar-General has compared together the returns of several districts, partaking, as much as possible, of these two characters, and presenting in the aggregate a nearly equal population. These I shall now refer to.

	Males.	Females.
Population, Metropolis, 1837(*a*), ...	830,421	960,030
Deaths from phthisis in half-year ending 1837, ...	1369	1297
Population in five agricultural counties in 1837, ...	830,584	893,196
Deaths from phthisis in ditto, half-year ending 1837, ...	407	451
Population in provincial cities, estimated October 1, 1837(*b*), ...	838,830	923,880
Deaths registered from phthisis in ditto, in half-year, 1837, ...	1544	1496

(*a*) First Report, 8vo. edition, p. 148. (*b*) Ibid. p. 150.

	Males.	Females.
Population in counties similarly estimated, .	879,543	897,437
Deaths from phthisis in ditto, . . .	956	1,250
Estimated population in the metropolis in 1838(*a*), ...	913,077	971,767
Deaths from phthisis in ditto, 1838, . .	4,057	3,630
Estimated population of five counties in 1838, ...	843,244	899,881
Deaths from phthisis in ditto, 1838,. . .	2,744	3,061
Estimated population of provincial cities in 1838(*b*), ...	898,233	943,144
Deaths from phthisis in ditto, ...	4,319	4,339
Estimated population of counties in 1838, .	892,688	904,095
Deaths from phthisis in ditto, ...	2,977	3,756

The same thing would be equally well shown by giving the returns for Liverpool, Leeds, Manchester, and Birmingham, all of which prove that the excess of mortality is no longer on the side of females within their districts, but on the side of males. But this will be better established by the following table, extracted from the supplement to the Second Report of the English Registrar-General, p. 168, and which shows the ratio which the returns exhibit when reduced to an uniform standard of a population of 100,000:

1838.	Males.	Females.
Leeds, ...	440	477
Birmingham, ...	526	410
London, ...	451	377
Liverpool and West Derby, . . .	595	571
Manchester and Salford, ...	549	548
England and Wales, ...	378	408

Now all these towns, except the first, exhibit an excess of greater or smaller amount on the side of males in the mortality from phthisis. But it must not be forgotten that this excess, striking as it is, is yet less apparent than the reality, from the

(*a*) Second Report, p. 158. (*b*) Ibid. p. 161.

impossibility of isolating completely the two classes of population. Every town embraces within its limits a considerable suburban population, while, on the other hand, almost every rural district comprehends some town or other, which swells its mortality, and interferes with the development of the results it would otherwise produce. This plainly proves that the relative liability of the sexes is exactly reversed, according as we select a civic or a rural population for the purposes of comparison. It also upsets the last of those theories of sexes to which I have referred, put forward to account for the difference; because a residence in town, though it *alters the proportion* in the number of men and women engaged within doors, and in the open air, does not *reverse* them, as it ought to do, were it competent to explain the difficulty. This leads me to state that I believe the true answer to the inquiry will be found in a careful consideration of the difference in the moral condition of the two sexes in the circumstances supposed. In a rural population, moral influences, in which are to be included everything connected with the intellectual development, the passions and emotions of our nature, tell with the greatest effect upon women, because of their greater sensibility, and their more frequent want of occupation. But among the inhabitants of our large towns and cities, men are even more exposed than women to the play of passion, arising from over-excitement on the one hand, and the failure of work upon the other. In the retirement of the country, life is passed in a kind of gentle tranquillity, which affords sufficient employment to occupy the mind without fatiguing it, but does not call into activity the more violent principles that prevail within us, nor strain our energies to their utmost tension. The excitement of the system is not so great as what prevails in towns, but the collapse that succeeds is proportionally less also. The pleasures that are enjoyed by those who live there may not be so intense, but they are more pure and permanent.

In our great cities, on the contrary, everything is bustle and

activity. The mind is perpetually on the stretch in the acquisition of fresh knowledge, or in the pursuit of professional advancement. It is there that science makes her brightest discoveries, and trade accumulates her richest stores. It is there that ambition finds the widest field for its exertion, and vice the most favoured opportunities for its indulgence. There the love of money and the love of praise find equal scope for their development. There, the scintillations of genius fly fastest from the collision of kindred minds. There, too, the flames of passion rise highest from the angry impetus of contending interests. There, art labours with the most unsparing energy to overtake the necessities of the human family, while luxury, on the other hand, with its refinements and its rivalry, is outstepping the means of gratification within its possession. There also speculation, with its gilded bait, lures many a thoughtless adventurer on to tread the seemingly secure path to speedy independence, till at last, too late, he finds that he has been walking on the pitfalls of disappointment, and is doomed to feel in all their agony the miserable consequences of his mistake.

In a word, everything connected with the social condition of a crowded city forces upon us the conviction that moral agencies of immense influence are continually operating upon its teeming thousands, and producing the natural consequences to which they lead,—disease and death.

I have still to add other arguments in support of this view, that moral influences have a most important tendency to produce consumption; but as I have already occupied so much space in this Number of the Journal, I must reserve them for another occasion.

Art. VI.—*Report upon the recent Epidemic Fever in Ireland.*

(*Continued from page* 86, *and concluded.*)

APPENDIX TO THE FEVER REPORT ON MUNSTER.

Since the publication of the Number for February last we have received the three following communications on the subject of the late epidemic fever in Cork and its vicinity.

Dr. Callanan, has afforded us the following observations:—

"What has been called the epidemic fever of 1847 in truth commenced in this locality, and, as I am informed, in many others, early in 1846, as is abundantly proved by workhouse and other returns throughout this district. From the commencement of 1847, however, *Fate* opened her book in good earnest here, and the full tide of death flowed on everywhere around us. During the first six months of that dark period *one-third* of the daily population of our streets consisted of shadows and spectres, the impersonations of disease and famine, crowding in from the rural districts, and stalking along to the general doom—the grave—which appeared to await them but at the distance of a few steps, or a few short hours. And so in sad truth it was; for the obituary of our workhouse here, for the year 1847, gives the appalling return of 3329 deaths!! Within the month of March of that year 757 inmates of that dismal abode perished from famine and fever. Between these two fearful agents of death and desolation, it now matters little where the preponderance lay. No human foresight could have anticipated or arrested their influence, as far at least as their direct causes operated. But it perhaps remains for a wise and beneficent legislation to take a lesson from the past, and, in its mercy and consideration, to endeavour, as much as in it lies, by averting hunger and distress through the numerous and legitimate channels of creating employment for the labouring and agricultural classes, to prevent the perpetuation, and, in

future, to avert the return of that state of suffering and wretchedness which has made the very name of this unhappy country a modern proverb for poverty, disease, and humiliation, in the eyes and on the tongues of the civilized world.

"My observations must, however, be confined to its progress and character amongst the upper and middle classes, where alone my experience lay, and amongst whom, in this district, both urban and rural, it prevailed very extensively, and in numerous instances assumed a character and progress of great complexity and danger.

"In admitting this, however, I do not mean to convey the impression that the late epidemic differed in any essential or peculiar character or degree from its former visitations in this country within my memory or experience. New incursions of disease, from the alarm and excitement which they cause, however little their identity may differ in reality from their predecessors, are apt to have a darker shade of character attached to them than perhaps they would deserve by a just and dispassionate comparison. Amongst the poorer classes, the fever of 1847 admits of no question as to its severity, and its appalling mortality; but it should be recollected and admitted that this mainly arose, and was derivable from an almost unprecedented state of privation, involving of necessity, in their issue, the very first rudiments and principles of fatal and intractable disease,—hunger, cold, impure air, deficient clothing,—in short, *intense want* in its most comprehensive and extended meaning, and in its most withering effects both on mind and body.

"These causes, however, in a medical point of view, as respective of, or involving any principle of practice for our guidance, cannot and ought not to be taken for more than they are really worth. In the production of epidemic diseases they have been, and ever will be *res notissimæ*, and their effects follow as invariable sequences whenever or wherever they prevail. In this doomed country they have for years been casting, and for many more they will continue to cast, not—alas!—their

shadows, but their bitter and blighting substance, both before and after them.

"In my judgment and experience, the character and treatment of the fever of 1847 differed but little, if at all, from that of 1817, amongst the better classes. It invaded them in the rural districts in each era, in the purest localities, and quite apart from infection or contagion, traceable at least to, or derivable from any obvious influence from such an agency.

"In numerous instances, exposure to wet and cold in these periods produced the disease. Fear, and the depressing passions too,—the '*animi pathemata*',—had a powerful and obvious influence. In the epidemic of 1817, when, after a lengthened war, peace brought a property panic, both mercantile and agricultural, the disease was easily excited, and operated most fatally; so much so, that scarcely an individual who at that period sustained, or contemplated the infliction of pecuniary losses or embarrassment, recovered from it; and, in consequence, very many of our best and most useful citizens fell victims to their fears and sensibility.

"As exemplifying fear of the disease arising from mental emotion, a very remarkable case occurred in the autumn of 1817, here. A very respectable lady, of a nervous temperament, was solicited for alms, on leaving a shop in one of our principal streets, by a female mendicant. No attention being paid to the supplicant, she dropped on her knees, and, in the spirit of a demon, invoked on the lady the visitation of the *black fever*, as she called it. The unfortunate victim of her imprecations hurried home in terror, sickened that evening, and in ten days died of malignant typhus. The catastrophe did not end here, for her husband caught the disease, and died within a few days after.

"At that period I put forward my views in a small publication, explaining the pathology which I then adopted of this disease, as well as its treatment; and, confirmed by all research or observation which has since come under my notice

in these many years of experience, I still adhere to the doctrine and opinions which I then embraced, under the full conviction that they have afforded me the most satisfactory and successful results in the management of this often mysterious and perplexing malady.

" ' When we consider the nature of those organs to which the influence of typhus fever seems especially directed, and the intimate connexion they have with vitality, we shall not be surprised at the sudden and intractable effects which are so frequently met with in this disease.

" ' In turning our attention to this subject, the brain first claims our consideration, because it is from this source that all the formidable and less manageable symptoms, which we so frequently meet with, appear to derive their origin. In unfolding the structure of the liver and lungs, we shall also find much peculiarity of organization. Now, every practitioner who is at all familiar with the progress of typhus fever must have observed the great tendency which these organs have to be affected with inflammatory and congestive appearances, under the influence of this complaint. When, therefore, we bear in mind their great vascularity, and the effects which long-continued excitement of the heart and arteries, deriving its origin in many cases from such an agent as contagion, and acting upon a delicate and complicated structure, may produce upon them, we shall not find it difficult to account for those sudden and intractable appearances which we so frequently find typhus fever assuming.

" ' When this complaint runs its course uninfluenced by any of the local derangements resulting from increased momentum of the blood, we probably shall have had nothing to contend with save a certain portion of debility, naturally arising from an exciting cause, operating for a given period of time, and modified in its nature and effects by particular circumstances, or the peculiar nature of the prevailing epidemic, &c. When, on the contrary, under the influence of great excitement in the

circulation of the blood, we find typhus assuming a more complicated character, and giving rise to many of the appearances of well-marked inflammatory diathesis, directing its influence to those organs which, from their peculiar structure, are more particularly susceptible of morbid impressions,—are we not warranted in concluding, that these effects are, in a great measure, attributable to a certain state, first, of the nervous system, and next of the circulation? If the exciting causes of typhus fever exerted their influence solely on the brain and nervous system, and produced a direct and *final* effect there, the natural consequence of such an impulse would be a state the very reverse of that which happens on the accession and during the progress of this complaint.

"'In the *synochus* of this country, which, indeed, is the more prevalent form of typhus, the symptoms of arterial excitement run so high as frequently to leave the physician doubtful of the real nature of the complaint. I have, in numerous instances, seen cases of this kind mistaken for the incipient symptoms of pneumonia, or acute rheumatism, and treated accordingly; when, to the great horror of the medical attendants, petechiæ, and other indications of typhus, soon made their appearance. These cases turned out favourably, and assumed a peculiarly mild aspect during their progress.

"'From an attentive consideration of these circumstances, we may, I apprehend, deduce the following conclusions:—first, that we cannot assign to typhus fever the character of direct debility at its onset, inasmuch as its accession is invariably marked by unequivocal indications of great vascular excitement, frequently giving rise to appearances of well-marked inflammatory affections; secondly, that the subsequent stages of debility or collapse which result from this excitement are directly attributable to it, and are very frequently proportioned to its degree of intensity; and, thirdly, that though the stage of debility that accompanies this disease should not be proportioned to the degree of previous excitement, it may be ration-

ally accounted for on a principle which all must acknowledge, though avowedly none can satisfactorily explain,—namely, the peculiar susceptibility which some constitutions evince in being more or less influenced by the same, or by different degrees of deleterious agency.

" 'It must be admitted, that virulent contagion will very frequently produce the sudden and overwhelming effects which this form of typhus assumes; and that it gives rise to these effects by its peculiar power of oppressing or destroying the energy of the nervous system,—first exciting, and then weakening the powers of the heart and arteries,—is, I think, equally rational as an assumption.

" 'Admitting, then, the question to stand on this basis, we can pretty well explain why fever arising from contagion will be more likely to assume an aggravated form than when it arises from other causes. The heart and arteries, acted upon through the medium of their nerves, the sources of their energy, and stimulated into inordinate motion, soon become weakened, and, with their corresponding veins, lose their tone; and thus begins to fail in them the power of preserving, or of restoring when disturbed, that necessary attribute of a healthy state—a just and equitable distribution of the blood. The lymphatic system, too, will not remain uninfluenced under such circumstances, but will have to encounter a share of the general disturbance, as will be evinced in many cases by increased secretion or diminished absorption'(*a*).

" The recent researches of pathologists have added to these and other views on this difficult subject, results from certain states of the blood, from which I am quite free to admit that more than surmise is fairly deducible, in settling this hitherto obscure and perplexing question. But I submit that, satisfactory *pro tanto* as these results may be, and undoubtedly are, they

(*a*) These opinions will be found stated at length in Dr. Callanan's "Practical Observations on the Pathology and Treatment of Typhus Fever," a second edition of which appeared in 1848. London, Renshaw; p. 102.

cannot absorb within themselves the entire solution of the problem, nor in any degree, perhaps, subvert the doctrine of the supremacy of nervous power and influence in their extensive agency throughout the animal economy. How, I would ask, can these changes in the nature and properties of the blood take place in this disease, by which it is so materially altered from its natural state, but through the nervous system? In my humble judgment, these useful and instructive researches give but additional force and argument to the doctrine for which I have contended more than thirty years ago.

"I think it unnecessary to go much into detail on the subject of treatment during the epidemic of 1847. Both in and out of consultation, it was my opinion that in three-fourths of the numerous cases I attended, local depletion, either from the head, the abdomen, or the chest, would have been a safe and necessary measure, especially in the early stages; in many of them, even at late periods of the disease, it was followed by obvious and most gratifying results. Cold to the head was, in most cases, essential for many days. It was attempted by many to supersede this practice by that of the early use of drastic purgatives, but I saw many instances of their injurious effects acting upon an extensive and, in this disease, for the most part, an impatient and a sensitive surface: they ran down the strength, while they left the real strongholds of the disease unreached, and, therefore, its symptoms and force unmitigated.

"In full, plethoric subjects, where no local congestion, or active determination to any great organs, existed, tartar emetic, in small continuous doses, acted most happily. Eight cases of this description, ushered in with great and apparently alarming activity of the vascular system, were kept under perfect control, for periods varying from six to twelve days, and then broke up. In four of them numerous petechiæ appeared towards the close, but no other typhoid symptoms were observable. Within my experience wine was seldom admissible until convalescence began, and even then I was very cautious

of its use. After depletion by leeches, and when the surface became cool and soft, if insomnolency or restlessness prevailed, without delirium, opiates proved, in some cases, signally beneficial. Extracts of poppy and of hyoscyamus, with a small portion of tartar emetic, gave great comfort.

"In active delirium, blisters to the stomach, the nape of the neck, and behind the ears, were always followed by beneficial results. This and free sponging of the surface with cold or tepid water very frequently, seldom failed to be attended with obvious advantage."

Dr. Cronin has furnished us with the statistical tables of the Cove Fever Hospital, which give a summary of 1239 cases, 631 males and 608 females, treated in that institution from September, 1846, to August, 1848, both inclusive, as well as the results of 200 cases in private practice. From these, taken together, it would appear that the average age of the patients was 28; the sexes being in the proportion of twenty-nine males to twenty-seven females. Of the entire number treated, seventy-five died, or 5·21 per cent., but this mortality varied from 4·50 per cent. in the cases occurring in private practice, implying those, chiefly in the middle and upper ranks of life, to 5·32 per cent. of those treated in hospital. From Dr. Cronin's carefully arranged tables it would appear that so many as ten per cent. per annum of the whole population were attacked, allowing for the ordinary increase of the people since the taking of the last census in 1841. This disparity in the returns from Cove, compared with those printed at p. 69 of the Number for February last, can only be accounted for either by the loose ideas which exist with respect to population and statistics generally, or to the calculations having been made with different materials, the mere town population having been employed in one instance, and both town and rural districts having been reckoned in the other.

Dr. Cronin says, that although an increase of fever showed itself early in 1846, it was only in January, 1847, that it exhi-

bited a rapidly extending appearance. Want of wholesome and sufficient food appeared to have influenced the disease; fever following rapidly in those persons who had suffered from privation, while wholesome and sufficient food rendered others more capable of resisting its attacks. Purpura was frequently observed long before the fever became epidemic; and amongst cattle pleuro-pneumonia prevailed extensively.

In answer to the seventeenth query,—"Whether the late epidemic differed from the former outbreaks of fever, and in what particulars?"—our informant states that it differed in the more tedious convalescence, and the greater liability to relapse; the frequent complication of dysentery or diarrhœa accompanying it or preceding its attack; and by bronchitis complicating the fever during the winter and spring months, or occurring during the course of convalescence. Recovery was frequently indicated by gradual decrease of the symptoms, or by increased action of the skin and kidneys, which latter symptom, our informant states, he was more in the habit of relying upon, and regarding as a ground for a favourable prognosis, than any other. The average duration of the fever was about twelve days; and convalescence was, in general, very slow. The usual sequelæ of the fever were erysipelas of the head and face, dysentery, and anasarca in a great many instances; and in one case total disorganization of the eye, from ulcerative inflammation, ensued. The treatment consisted in alterative mercurials and diaphoretics; some cases required wine, and some few local bleeding; mercurial alteratives were employed in all cases, and in some carried to slight ptyalism, which was found to be decidedly advantageous; and in all cases complicated with irritation of the digestive tube, opium, in various combinations, was given with marked benefit.

Report of fever cases treated in the North Infirmary, Cork, during the epidemic of 1846, by John Popham, M. D.:

"The state of health in this city was not below the average during the early part of 1846. Fever of a gastric type was

rather prevalent in May, and cases of dysentery and scurvy were observed, the latter sometimes consecutive upon an attack of fever, but no serious amount of illness existed before the failure of the potato crop. The pressure from without upon the city began to be felt in October, and in November and December the influx of paupers from all parts of this vast county was so overwhelming, that, to prevent them from dying in the streets, the doors of the workhouse were thrown open, and in one week 500 persons were admitted, without any provision, either of space or clothing, to meet so fearful an emergency. All these were suffering from famine, and most of them from malignant dysentery or fever. The fever was, in the first instance, undoubtedly confined to persons badly fed or crowded into unwholesome habitations; and as it originated with the vast migratory hordes of labourers and their families congregated upon the public roads, it was commonly termed "the road fever." At the outset it was kept in abeyance by the ordinary means employed in this city for fever cases; but the Cork Fever Hospital was obliged, in January, 1847, from the increase of fever in the city, to refuse the workhouse cases. After a delay of some weeks in endeavouring to set to work the complicated machinery of the Board of Health, the local authorities resolved to act for themselves, and, on application, the trustees of the North Infirmary gave up their hospital, which was, I believe, the first public step made in this county for meeting the epidemic. The hospital was ready for the reception of patients on the 23rd of February, and was worked by the medical staff(*a*) for three weeks before the Board of Health was ready to give the necessary sanction.

"The chief haunts of fever in the city all through the epidemic were the cheap lodging-houses in the suburbs, which were always densely crowded by paupers flocking to the city, chiefly from the western district, *en route* for England. From

(*a*) Drs. Howe, Finn, and Popham.

these nursing places of contagion it quickly extended itself to the dwellings of the working classes, and, at a later period, it spread among the wealthier inhabitants. It was hard for the latter to escape, as crowds of importunate mendicants were allowed to beset not only the streets but the shops and doors, so that in passing through, these persons were at once sickened by the noisome effluvium, and several took the disease.

"The number of patients admitted into the Infirmary, from 23rd February to 6th September, 1847, amounted to 1602. Of these 897 were males and 705 females. We found that no age enjoyed an immunity from the disease, as we had patients from the extreme limits of human life, namely, from four days to seventy-eight years. The age most frequently attacked was from 15 to 20, the cases at this time of life being 334, over one-fifth of the whole. The next age, in order of frequency, was from 20 to 25; of these 244 persons were admitted. The periods from 10 to 15 and from 25 to 30 were about equal, the numbers being 228 and 227. In the decennial periods from 30 to 40 we had 258, and from 40 to 50 there were 147. From birth to ten years 97 cases were brought to hospital, and from fifty years upwards there were 89. The epidemic appeared to reach its culminating point in this city in the month of July, beginning to decline in August, when, in the course of a fortnight, the type was suddenly converted to dysentery. The North Infirmary was soon insufficient for the numbers hourly applying, and in March and April two other large hospitals were opened, and sheds added to the Cork Fever Hospital, so that in a population of 80,000 we had for several months from 700 to 800 patients under daily treatment for fever.

"Without giving any opinion upon the communicable nature of the epidemic, I shall merely observe that we were compelled to act on the supposition that it was contagious. Thus when the disease appeared in a family it spread rapidly, unless immediate separation was enforced and sanitary precautions at once adopted. In the hospitals almost all the nurses and

laundresses were attacked, and, instead of becoming habituated to the disease, and thereby rendered fever proof, they were sooner or later stricken with the epidemic, and generally in its severest type. Again, it was found imperatively necessary to separate the convalescent patients for two or three weeks, as their too quick return to their families contributed to spread the disease. A curious example of the communicable nature of the ailment occurred in the board-room of the Cork workhouse. Three of the guardians were stricken with fever on the same day, and it was afterwards observed that they happened to sit at a particular side of the room, in a draught of air which, perhaps, conveyed the concentrated effluvia from a crowd of paupers waiting in the confined ante-chamber for admission. No case occurred in any other part of the room.

" In comparing the degrees of severity of the epidemic, as it attacked various sections of the community, it was a subject of general observation, that the disease was both more severe and more fatal in private than in hospital practice. The deaths in the higher circles were for a time quite appalling, and scarcely an issue of the local papers appeared without a notice of some death. In the greater number of these cases the head was heavily engaged, and maculæ, delirium, muscular tremors and rapid prostration of the intellect and vital powers, were the usual symptoms. In cases succeeding exhaustion from famine the appearances were very peculiar, the fever assuming a low gastric type, indicated by a dry tongue, shrunk apparently to half its size, and brown in the centre; lips thin and bloodless, coated with sordes; skin discoloured and sodden; general appearance squalid in the extreme, and hunger-stricken. These symptoms, and a loathsome, putrid smell emanating from their persons, as if the decomposition of the vital organs had anticipated death, rendered these unhappy cases too often hopeless. They used to creep about the city while their strength allowed, and then would sink exhausted in some shed or door-way, and often be

found dead. It was hard to ascertain particulars about the course or duration of the disease in this latter class.

"While a general similarity could be traced in the distinguishing features which constituted the epidemic, yet each organ, when particularly engaged, impressed its own peculiar train of symptoms upon the case, so as to cause considerable latitude in its type. Thus, in one form, bronchitis was predominant, and in the aged rapidly assumed an adynamic character: pneumonia and pleuritis were more rare. In another variety gastric disorder existed, and a dry and red tongue, with retching and tenderness of the epigastrium, were the prominent characters, accompanied in severe cases by cæcal gurgling and soreness on pressure, and general tympanitic distention. In others, again, the disease began at once with diarrhœa or dysentery, and many of these cases had been previously suffering from fatigue or contagion. In a fourth variety, the liver seemed the organ principally affected, and jaundice was the chief symptom from the first. This complication occurred more frequently in persons of middle or advanced age than in the young, and did not seem so dangerous as in former epidemics, comatose symptoms rarely taking place. We had then a series of cases showing a resemblance to scarlatina in soreness of the throat and brilliant redness of the tongue, and to acute rheumatism in the pains in the limbs and swellings of the joints, with eruptions on the body of urticaria, or on the legs of erythema nodosum. A curious succession of symptoms was noticed in more than one of the latter class of cases, such as pains in the extremities, sudden transition to the pericardium accompanied by blotches of erythema and soreness of the throat, relief of the heart by treatment, retrocession of the spots, and return of pains to the limbs first attacked, but with abated force. We had finally a large proportion, amounting to one-sixth of the whole, of cases of typhus, all of them attended with severe disorder of the sensorium, with maculæ and early prostration of the vital powers.

"One of the chief peculiarities of the epidemic was the liability to sudden and frequently dangerous changes in the symptoms, especially in aged or weakly persons. You would be suddenly called to a patient pronounced, at your former visit, almost out of danger, and then find the person in a state of total collapse; either the extremities being cold like ice, or covered with a clammy perspiration. Critical changes were noticed in numerous cases. Thus an attempt at a crisis, sometimes successful, would occur in the skin, which, from a dry and burning state, would become suddenly drenched with perspiration. Rapidity of change was also a feature of the tongue, as in a few hours it would vary from a moist secreting state to a dry and brown condition. It could, however, in severe cases, be depended on more surely, as affording signs of an approaching crisis, than any other symptom, being the first to give way. The circulation was very inconstant, being in some persons barely affected all through, and in others running rapidly up, and undergoing an equally rapid depression. Profuse hemorrhage in some instances induced collapse, especially when it occurred from the intestines.

"The ordinary *catamenial discharges* appeared rather to relieve the symptoms, but increased the debility; and in some cases uterine hemorrhage was so profuse that strong styptics had to be employed. In females who were pregnant, abortion commonly took place, and was not attended with as great hazard as in other epidemics, though always a grave complication. In one case, in which the duration of pregnancy was six weeks, abortion occurred on the sixteenth day; in another, advanced to the fifth month, it occurred at an early period of the fever, and in both cases no serious hazard to life occurred; but in the third instance met with, namely, a woman aged 33, who was seven months pregnant, a sudden change for the worse came on the day after the miscarriage, the lochial discharges being arrested, and intense uterine pain, with fluttering pulse, aphonia, and rapid breathing, setting in. By the liberal use of wine,

and of calomel, camphor, and opium, with a few leeches, and the persevering application of the turpentine epithem, she recovered, and was able to leave the hospital a fortnight after.

"*Epistaxis* occurred in my patients about once in twenty cases. It did not come on before the fifth day, and seemed to prefer the uneven days of the fever, viz., the fifth, seventh, ninth, eleventh, and fifteenth. It usually relieved the headach and frontal fulness, and in some cases appeared critical, amendment quickly following. It was noticed in but one fatal case. Its extent was variable, but I did not see any case so profuse as to require interference. The range of age at which it occurred was from 13 to 40, usually about 20, and it seemed more frequent in females. It sometimes co-existed with hemorrhages from other organs, chiefly the intestines, uterus, or lungs.

"*Purpuric spots* were very rare, and usually occurred in children,—one woman, however, aged 50, was thickly covered with deep crimson spots. Traces of the same existed on the palate, and she had profuse evacuations of dark blood from the bowels. She was moribund when admitted.

"*Maculæ* were always indicative of a severe attack, especially when the colour at all declined from the florid state. They were found in cases differing widely in age, from six years up to sixty, and were more frequent in males than in females. The period of their appearance varied from the fifth to the thirteenth day; the eighth was the most frequent. Their period of duration was also inconstant, sometimes lasting but a single day, more usually three or four days, and rarely exceeding six. Occasionally the whole body was coated, but we always found them in greatest abundance on the chest and arms, existing there when absent in other parts. The face was not exempt in the lighter varieties, but showed no trace of the true petechiæ. In the maculated cases, the cerebral and abdominal complications were more frequent than the pulmonary. In favourable cases, the eruption assumed the rose-coloured appearance, fading on pressure, sometimes slightly raised above

the surface, or the rubeoloid character with gastro-enteric rather than catarrhal symptoms. In the cases of typhus gravior there was present either an obscure mottling of the surface or well-marked petechiæ, permanent on pressure, and the rose rash in some instances passed imperceptibly into the latter. In but one case—a boy of 15—was I able to notice *sudamina;* they appeared on the seventeenth day; he had a tympanitic abdomen nearly all through his fever. The symptoms gradually amended after the miliary eruption came out. Herpetic eruptions on the face and lips sometimes occurred, seldom before the fourth day, sometimes on the sixth or seventh. These cases were not always, though mostly, pulmonary. It was regarded by us as a favourable sign, but was in one case followed by aphthous ulceration of the mouth and pharynx, from which the person with difficulty recovered.

"*Delirium* seldom existed to any extent during the first week; it was accompanied by pain of head, vigilia, tremors of the tongue and muscles, &c., and always caused much anxiety, from the disposition in the patient to get out of bed and wander about. In one case the patient got out of a two-story window, and was fortunately caught by the arm while in the act of descent.

"*Relapse* was a peculiar feature of the epidemic, taking place in at least one-sixth of the cases. It occurred mostly in the ages from 15 to 40, being less frequent in children. Old age, however, did not prevent relapse, we had examples of it in women of 60 and 70. The day on which it occurred was variable. It rarely set in before the eleventh or twelfth day from the date of the illness, an interval of a few days usually elapsing between convalescence and relapse. The seventeenth and nineteenth days were not unfrequently marked by secondary fever. The period of the relapse generally lasted from five to eight days, and the symptoms were mostly lighter than in the primary attack; but the reverse was not uncommon. Greater fear of the result was expressed by the patient in the relapse

than in the first illness. It appeared to ensue in some cases from constipation, and in others from errors in diet, the convalescence being marked by a hunger for food, which the patient would satisfy at all hazards. The secondary fever set in with a rigor, followed by vomiting of green matter, tenderness of abdomen, and sometimes syncope, and occurred more frequently after light fever, especially of the gastric type. It sometimes ushered in an attack of diarrhœa, dysentery, or cynanche tonsillaris. Females were more liable to it than males. Some few cases had two and even three relapses, the series becoming lighter, until the disease appeared to wear itself out.

"The *Duration* of the fever was variable. In slight cases, which did not relapse, it terminated in from five to eleven days, while the relapse cases were seldom free of the symptoms before the end of the third, or even the fourth week. The typhoid cases were seldom thoroughly convalescent before the fourth, and sometimes the fifth week. It required a long time for the strength to be regained, pallor of the face and weakness of the lower limbs continuing for many weeks, sometimes for months. No remedy hastened the recovery more than complete change of air.

"The *Mortality* among the 1602 cases admitted into the Infirmary amounted to 156, 93 being males and 63 females; being an average of one death in $10\frac{1}{4}$; of these, however, 36 cases were admitted moribund, dying within forty-eight hours from admission. The mortality among females was less than among males, in the proportion of 1 in $11\frac{1}{5}$ to 1 in $9\frac{2}{5}$. In the spring months the mortality was 1 in 9, while in the summer it was 1 in 12. In the above number are included the cases complicated with dysentery, and the cases of starvation fever, which, when the hospital was first opened, were very numerous. In all instances the heaviest cases of fever were selected from the applicants. From the table of ages, it appears that the results were greatly influenced by age, the ratio being, from 10 to 20,

1 in 24; from 20 to 30, 1 in 12; from birth to 10, 1 in $10\frac{2}{3}$; from 30 to 50, 1 in $6\frac{2}{3}$; and from 50 upwards, 1 in 3. There are no data for the mortality of patients treated in their houses.

"The *Sequelæ* were chiefly erysipelas with typhoid symptoms, coming on generally in the third week of the fever, and lasting from four to eight days, the head and neck being chiefly affected. Blisters to the nape seemed to induce it. Bed-sores were not common. Furunculi followed in several cases, and we had a case of pemphigus gangrenosus attacking the ear in a female. Diphtheritis occurred in some fatal cases towards the close. Dysentery was the most serious result, and, coming on after a severe fever, it proved too often very unmanageable.

"The *post mortem* appearances were noticed, I am sorry to say, in very few cases; but in such as came under my examination a great similarity was observed to the lesions found in the hospitals of Paris; the intestinal glands, especially those of Peyer, being usually either enlarged or ulcerated. The mucous membrane in the vicinity of the glands was in a highly inflamed condition; and in the ileum various degrees of ulceration existed, from slight abrasion to patches of yellow gangrene. Externally the free parts of the small intestines exhibited branching arterial injections, the portions in connexion with the mesentery being less affected. Some parts of the small intestine were much inflated, and others contracted more than natural. In several of the dysenteric cases, the ileum, except in the vicinity of the ileo-cæcal valve, was quite blanched.

"The stomach was frequently found contracted, its mucous membrane corrugated and softened, with congestion; in cases where vomiting was urgent during life, vascularity existed at the œsophageal opening. Both stomach and duodenum were coated with a greenish-yellow tenacious matter.

"The cæcum was nearly always in a high state of inflammation and turgidity, with patches of ulceration of various degrees. The glands in the colon were enlarged, and in dysen-

teric cases the mucous membrane had lost its plaited form, and was completely honey-combed and rugged, the lesion of texture increasing as you approached the rectum: the appendices epiploicæ were changed into a gelatinous appearance. The colon itself was mostly contracted abnormally, and gave to the touch a resisting fleshy feel.

"The liver was found turgid, and loaded with dark blood; the bile in the gall-bladder thin, and of a dirty orange colour; the substance of the liver was easily broken down.

"The spleen was sometimes found hard and hepatized, but more usually enlarged and softened, containing a grumous matter like a mixture of pus and blood. The mesenteric glands were swollen and inflamed, especially in the vicinity of the ulcerated intestines.

"To speak generally of the *Treatment*, there was no disease in which the *nimia diligentia medici* was more hurtful than in this epidemic. The simple cases needed little; emetics of ipecacuanha at the beginning, shaving the head, and keeping it cool, combined with gentle aperient and diaphoretic medicine, conducted the patient safely through. In the gastric complication, sinapisms or blisters to the epigastrium, with effervescing draughts combined with small opiates in mint waters, were generally sufficient in severe cases. Small doses of calomel and opium, hydrocyanic acid, and in some cases brandy, had a good effect. In the typhoid cases stimulants were given early; camphor, ammonia, and ether were useful, but wine was the most to be depended on. We seldom had to exceed three or four glasses in the twenty-four hours. When the sensorium was much affected, blisters were very useful, preceded usually by cautious leeching. The re-application of leeches was preferred to putting on many in the first instance. General bleeding was not employed. In some of these cases, leeches applied to the right hypochondrium had an excellent effect.

"Opium was of the most invaluable benefit; after several nights of restlessness, an opiate produced magical effect. After a trial of more, we seldom exceeded ten minims of Battley, re-

peating it, if necessary, and occasionally adding to it an antimonial. In dysenteric cases, Dover's Powder was our main stay, with opiate enemata. When there was much loss of blood, the acetate of lead and acetated tincture of opium generally checked it, but had less effect on the diarrhœa. Mercury was not given in its specific form, and a difficulty existed of inducing salivation."

APPENDIX TO THE FEVER REPORT ON ULSTER.

From Dr. Seaton Reid, of Belfast, we have received the following Report of the late epidemic, as it appeared in that city:

"It is admitted by all, that when fever hospitals have been in existence for years, and acquired the confidence of the poor, the admissions into them may be taken as an accurate criterion of the amount of contagious disease that prevails in their neighbourhood.

"I find, therefore, on examining the register of the Belfast hospital, that for several months previously to August, 1846, there had been a gradual diminution in the weekly average of admissions, until they had diminished to twelve in that month.

"I think we should date the commencement of the epidemic here from September, 1846, as the weekly average had then risen to 20, and continued steadily to increase in the following ratio:—in October, to 28; in November, to 24; in December, to 31; in January, 1847, to 55; in February, to 50; in March, to 83; in April, to 172; in May, to 350; in June, to 524; in July, to 603; in August it had diminished to 404; in September, to 276; in October, to 199; in November, to 151; in December, to 110; in January, 1848, to 79; in February, to 74; in March, to 59; in April, to 44; in May, to 43; in June, to 34; in July, to 28; in August, to 31; in September, to 23; and in October, to 20, when the average had again reached its minimum number. It is thus evident, that our recent epidemic extended itself precisely over a period of two years, and was one of unprecedented prevalence.

" To meet so rapid and general an increase of disease—our admissions in one week in July being the enormous number of 660—we had three hospitals in operation; and, these being found insufficient to receive all who applied, tents capable of containing 700 convalescents were erected in the neighbourhood of the town. These were found perfectly safe for the reception of this class of patients, provided a little care was exercised in the selection of those that were transferred to them(*a*).

" It could not be said that scarcity of food, or want of employment, was the *originating* cause of our epidemic here, because our working classes were fully employed, and provisions unusually cheap, till the early part of the year 1847. No doubt the reduction in the stamina of our population, by the subsequent deficiency of nourishment, was one of the chief causes of the diffusion of fever, by facilitating the action of contagion, the influence of which in fever will be shown by the accompanying table, No. 3.

" In speaking and writing of the recent visitation of disease it is not unusual to call it an epidemic of fever; this, however, in so far as relates to Belfast, would be very erroneous, inasmuch as the epidemic did not consist in the prevalence of one disease, but was composed of fever, dysentery, and small-pox. Owing to some confusion in the register of one of our hospitals, the relative number of these diseases, with their mortality, cannot with perfect accuracy be now ascertained; but the following is very nearly correct:—Fever, 13,469; died, 1758. Dysentery, 1836; died, 591. Small-pox, 325; died, 103.

" The foregoing were only our admissions into hospital; but I have no doubt that to our fever and dysentery numbers we should add at least one-fourth more, as many were treated at home, owing to the want of room in our hospitals, and the unwillingness of others to enter them.

" The population of the Belfast union, from which the above

(*a*) On the 17th of July, 1847, we had in our tents and hospitals the large number of 2118 cases.

numbers were received, amounted, by the Census of 1841, to 100,992, which in all probability was increased by the poor from different parts of the country to the extent of 110,000, who were attracted to our town by the energetic exertions made by its inhabitants to relieve the sick and destitute.

"I have stated above that the epidemic here was constituted by the prevalence of several diseases, and I now add that in the fever portion of these we had prevailing several separate and distinct species of fever. Twelve years' connexion with fever hospitals has convinced me that a very serious error has been committed by almost all the most recent writers of monographs on fever, in their denying the existencc, both in this country and in England, of more than one species of that disease. This error exists in the works of Drs. Southwood Smith, M'Cormac, Ormerod, and others, and will be found pervading almost all the communications in Barker and Cheyne's Report of the Epidemic of 1816–17–18. The consequence of this error has been, that we do not possess that amount of precise information regarding the history, the symptoms, the pathology, and the relative mortality of our several species of fever, that their frequent prevalence in this country would lead one to expect. In this respect the American physicians are in advance of us, for Drs. Bartlett, Jackson, and others, have not only recognised and described the several species of fever peculiar to America, but have also pointed out the difference existing between our maculated typhus, carried into their cities by our emigrants, and their own typhoid fever,—the species of fever so minutely described by Louis in Paris, and which has been so often confounded with our maculated typhus.

"To guard against all misapprehension and controversy, it is necessary to define the meaning attached to the word 'species.'

"Several naturalists, when classifying plants and animals, wished to include under this term all those individuals that bore to each other so close a resemblance that it might be in-

ferred they had sprung from one common stock, but Cuvier and Prichard laid aside mere resemblance as insufficient, and included under it only those that had the power of reproducing an individual having all the essential characters of the parent.

" It is, therefore, in this restricted sense that I would apply the term in fever, and conceive that maculated typhus should be called a species of fever, because infection from it will produce in the infected a fever having the characteristic peculiarities of maculated typhus, and not those of relapsing synocha; and in like manner infection from the species I call relapsing synocha will produce a fever with the characteristic peculiarities of it, and not those of maculated typhus; just as the infection from measles will produce measles, and not scarlatina, and the infection of scarlatina will not produce an attack of measles.

" The question of there being several distinct species of fever in this country is not one of mere scientific interest alone, but deserves our attention for several reasons:—

" First. As each species would appear to have an average mortality peculiar to itself, and as this varies very much in amount in each, it is evident that if a fever with a high mortality prevails in one district of country, and one with a low mortality prevails in another, comparisons favourable or unfavourable may be drawn, which the real facts would by no means warrant.

" Second. An admission of there being several species, each having its own mortality, enables us to account satisfactorily for the very great difference of mortality observed in the hospitals of different localities during the same epidemic, or in the same hospital during different epidemics: for instance, the mortality in the Belfast hospital, among 1258 cases, during the year 1819, was 1 in $32\frac{1}{2}$; while in the year 1838 it was so high as 1 in 7; and in the epidemic of 1845 had again fallen to 1 in 17.

" Third. The question demands our attention, from the direct bearing its solution has upon the lives of our patients; for

if it be ascertained that the risk to life is very much greater from an attack of one species than from an attack of any other, it is evident that we are not justified in treating in the same wards persons suffering from maculated typhus, in which the risk to life is great, with persons who may have attacks of any of the other species in which the mortality is very much lower.

" So convinced was I of the truth of the above as the result of my observation, when one of the attending physicians to the Belfast hospital, then the county fever hospital, that on a transfer of the care of all contagious disease to the poor law guardians, and my appointment as physician to their hospital, I determined to treat maculated typhus in wards separate from other species of fever, and to have separate convalescent wards for each; the result of which has been, that attacks in the hospital of one species of fever after the other are almost unknown.

" But it must not be supposed that the combined prevalence of several species of fever formed a peculiarity of the recent epidemic alone, for, while it is admitted that any one species may prevail at times, to the almost entire exclusion of the others, a reference to the works of Rutty, to the various communications in Barker and Cheyne's Report, to essays in several of the medical journals, and to the printed annual reports of various fever hospitals, will discover such expressions as these:—' typhus fever relapsing again and again;' ' maculæ often present, as also a measles-like eruption; relapses frequent;' ' the fever then changed to a short fever called the five-day fever;' ' the mildest epidemic typhus ever seen; relapses very frequent;'—expressions which clearly indicate that in our former epidemics several species must have been prevalent, but were treated of under the generic term ' fever;' whereas I contend they should have been acknowledged and treated of as separate and distinct species, originating, as I have already remarked, in separate sources of infection.

" I believe that we can in this country have little difficulty in recognising four distinct species of fever, to which I would

propose to attach the following names, the two first being to a certain extent descriptive of the diseases to which they belong: 1, maculated typhus; 2, relapsing synocha; 3, synocha or febricula; 4, synochus, or common continued fever.

"I. *Maculated Typhus.*—I have prefixed the word 'maculated' to typhus, because I believe that there has been no term in medicine which has been used with less precision than the word 'typhus.' So indefinite has been the application of this term in fever, that, perhaps, no two writers for years past would use it as descriptive of the same disease. Whenever, in the course of a febrile affection the tongue became dry, the pulse feeble, and the strength of the patient reduced, with other signs of debility, he was at once pronounced to be suffering from typhus fever. Now nothing can be more certain, as has been well shown by Andral, than that all these symptoms may be the result of some visceral inflammation, and not dependent on contagious fever at all. If, therefore, we wish to use terms which would at once convey to the mind of another an accurate and definite idea of the disease we were describing, we are perfectly successful in this instance, by the combination of these two words, which at once indicate its two leading and characteristic symptoms, namely, the eruption on the skin and the affection of the brain, and describe a species of fever with unmistakeable accuracy and precision.

"It is usually stated that the invasion of this species of fever is slow and insidious, the patient scarcely feeling himself unwell; but I have almost invariably found that he described himself as being on any particular day in a state of the most perfect health, and on the next to have been seized with rigor, headach, pain in the back, and the other usual symptoms of fever. I conceive that the rigor should in this, as in all other species of fever, be taken as the commencement of the disease; and, unless it had occurred during the night, it is almost invariably remarked by the patient. The pulse increases very gradually in frequency, and seldom at any time during its course

exceeds more than 120 or 130 beats in the minute. Even after crisis it requires a few days to subside within the healthy limit, and sometimes descends so low as 35 or 40 beats.

"About the fifth day an eruption resembling measles, which is at first observed on the soft white skin in front of the shoulder-joints, and on the epigastrium, appears on the body; for a few days it is capable of being momentarily removed by pressure, but becomes less so as the disease advances, and produces diminution in the activity of the circulation. Although generally observable till the termination of the disease, it may remain out only thirty-six or forty-eight hours, but is as characteristic of this species of fever as a peculiar eruption is diagnostic of either scarlatina or measles.

"The brain is always more or less severely involved in this fever, especially among the rich and educated classes of society.

"Its duration is generally fourteen days from the rigor, and its mode of crisis either by an increased secretion of urine or gentle perspiration; if the latter be profuse it is in general a fatal symptom.

"The complications occurring during the course of this fever are, in addition to that of the brain, chiefly those inflammatory affections of the bronchial mucous membrane, or of the substance of the lung, which are most frequent among the poor. An abdominal complication is the most rare of any, bearing in this respect a marked contrast to our relapsing synocha or the typhoid fever of Louis.

"There is no pathological appearance peculiar to this disease, whatever changes dissection discovers being only the result of the accidental inflammatory or congestive complications already referred to. In this respect it resembles scarlatina, measles, &c.; and as it appears to be influenced by the six laws described by Dr. Gregory as peculiar to these diseases, I agree with Drs. Stewart, Alison, and others, that it should be placed among the exanthematous fevers.

"A person having had an attack of this disease appears to be protected against a second, as is satisfactorily proved by the well-known immunity of those hospital nurses who have had an attack of it. I am aware persons have been described as having had several attacks of typhus fever, but I have already alluded to the loose way in which the word typhus has been applied, and I believe we have not yet on record an authentic case of a person having a second attack of the maculated typhus I now describe, viz., a fourteen-day fever with the measly eruption and the concomitant affection of the brain. This fever, however, affords no protection against attacks of any of the other species(*a*).

"*Sequelæ.*—This species can scarcely be said to have any sequelæ peculiar to it. If erysipelas prevails in the hospital, a patient having had a favourable crisis may in a few days be seized with rigor and a return of febrile symptoms, which in about three days will be followed by some redness, pain, and swelling about one of his ears, thence extending over the whole scalp, across the face, through the nostrils, into the pharynx, and then into the larynx, producing there one of the most fatal complications that can occur.

"The areolar substance surrounding the parotid gland very often becomes inflamed, passing slowly into suppuration, occasionally producing sphacelation of the coats of the blood-vessels and fatal hemorrhage.

"If dysentery prevails in the hospital, or is epidemic, it may also attack during convalescence, and is in such cases most intractable. The high mortality in some hospitals was caused by this complication; but as at our hospital the dysenteric patients were treated in a separate building, its occurrence with us was comparatively rare.

(*a*) In this opinion we do not agree with Dr. Reid: there are many well-authenticated instances of medical men having had maculated fever twice. (See Drs. Cusack and Stokes' paper on the Mortality of Irish Medical Practitioners.)

"That maculated typhus is a contagious disease appears to me to admit of no doubt; and by a table of the causes of illness assigned by 4601 patients ill with fever, it appears that most were exposed either directly to contagion, or came from establishments in which fever prevailed.

"Of this species of fever we treated during the epidemic 1366 cases, of whom there died 258, which was a mortality of 1 in 5 and a fraction.

"There were admitted, however, during the epidemic, a number of persons in whom there was an eruption on the body, which was either so scanty or indistinct that we could not positively pronounce them to have maculated typhus: many, I am sure, were so, because they came from families in which this species of fever prevailed. I have, however, classified them under the head of *doubtful maculated typhus*, and their number was 179, of whom nine died.

"Finding this communication is extending beyond what I would wish, I shall not enter at all upon the question of treatment, either in relation to this or any of the other species of fever.

"II. *Relapsing Synocha.*—The term synocha has long been used in connexion with fever, and indicated a disease in which the symptoms were in general intense, but of short duration.

"It has also been applied by Dr. Christison to this species of fever, when prevalent in Edinburgh, some years ago; but it has appeared to me desirable to associate with it some word which would form a title as descriptive of it as *maculated* typhus is of another species. I have, therefore, prefixed to it the word *Relapsing*, which describes one of the most marked peculiarities of this fever, and indicates with precision the disease it is applied to. This is evidently the fever which in the reports, &c., already referred to, has been spoken of as 'a short fever,' 'a five-day fever,' 'a typhus fever in which relapses were frequent,' &c. For as it is well ascertained that maculated typhus never relapses in the sense in which this fever does, it is clear that this

is the species of fever to which the above terms must have been applied. The annual reports of our hospital here show that a fever with this peculiarity was not unfrequently observed in former epidemics, and it has now formed a considerable portion of two epidemics since my connexion with the Belfast hospital. It prevailed in Edinburgh in the spring and summer of 1844, and was imported from Scotland in the end of the summer of that year, and formed the great bulk of our epidemic of 1844–45. Doctors Cormack and Wardell have published two able monographs respecting it; and the differences between it and maculated typhus have been very distinctly and ably pointed out by Dr. Henderson, in a paper in the Edinburgh Medical and Surgical Journal for January, 1845.

"I have already remarked that, contrary to the general received opinion, the invasion of maculated typhus is sudden and well-marked; but if possible this disease is still more so. The rigor is most severe and the pulse within twenty-four hours after it becomes as frequent as 120, 130, or 140, and in a day or two after may reach 150 or 160. The headach is in general very severe, but there are not the vertigo and ringing in the ears, with the suffused and injected eye, that are found in maculated typhus. In fact the absence of these symptoms may be taken as a pretty certain indication of the species of fever which we shall have to treat. From the commencement there is very great irritability of the stomach, which rejects everything, and which is accompanied by very great thirst. This gastric complication was infinitely more severe and intractable during the epidemic of 1844, than during our recent one. Most severe pains in all the muscles of the body are very frequently present, rendering the patient almost as helpless in bed as if he suffered from acute rheumatism. Delirium of a very violent and noisy kind often occurs during its course. A very fatal complication in this species was jaundice, which was not unfrequently associated with a true *purpurous* eruption over the body, produced as this species of eruption always is, by a real

ecchymosis or effusion of blood into the areolar tissue, and not, like the eruption of maculated typhus, removeable at any stage by pressure. When these violent symptoms have continued to the fifth day, the patient falls into a most profuse perspiration, often preceded by a rigor, saturating the bed-clothes, and in a few hours the pulse will fall from perhaps 150 or 160 to 70 or 80. No sooner has this crisis taken place than the patient at once feels himself in the most perfect health, and is most clamorous for food and permission to leave his bed. From an examination of a table which I constructed from the hospital register, showing the days, calculating from the period of rigor, upon which a crisis occurred among 385 patients, it appears that on the fifth day after rigor more than double the number occurred than on any other day. Until the extraction of this table from our register I was under the impression that a much larger proportion had their crisis on the fifth day. I may here remark that the pulse and the other symptoms are noted accurately every day in our fever cases, from their admission into the wards till their transfer to the convalescent wards; so that I consider very great dependence may be placed upon the accuracy of this table(*a*).

"The patient having felt himself for some days in the good health above alluded to, has again another rigor, which as the table shows occurs most frequently on the thirteenth, fourteenth, or fifteenth day after his first rigor, or on the eighth, ninth, or tenth day after his first crisis, his pulse becomes again suddenly increased in frequency, with a return also of the symptoms noticed in the first attack, which having continued

(*a*) Dr. Reid has furnished us with a series of most interesting statistical tables, showing "the influence of contagion, &c., in the production of fever, in 4601 patients;" the dates "of rigors and crises in 385 cases of relapsing synocha;" and "the diseases admitted during each month of the year, with their mortality," &c. &c. As the character of our Report does not admit of their publication, we must refer our readers to the last Report of the Belfast Fever Hospital.

for two, three, or four days, a second most profuse perspiration takes place, with an equally rapid subsidence of the pulse; and the patient again feels himself at once restored to health. The table indicates the above days, as those upon which, after the second rigor, the second crisis most frequently occurs.

"I am aware that persons have been described as having a second relapse in this species of fever; but having watched not a few cases for days after the second crisis, without in one instance detecting such an occurrence, I am inclined to believe that in the cases where these three feverish attacks occurred, the patient must have come into the hospital with the synocha or febricula species, to which the relapsing synocha was added. In a few instances the bellows murmur was looked for at the heart, but not detected in any.

"In addition to jaundice, already alluded to, there was another very fatal complication, caused by an entire suppression of the secretion of urine.

"Enlargement of the spleen was occasionally detected in this species of fever, both by the touch and by percussion, but it appeared to have no influence over the result.

"*Sequelæ.*—An attack of this species of fever was occasionally followed by inflammation of the iris, but which appears to have occurred more frequently in Scotland than it did in either of the epidemics here. Amaurosis took place in one or two instances.

"Anasarca of the lower extremities very often followed, and was often accompanied by purpurous spots on the limbs, and effusion into the knee-joints.

"The muscular pains remained for a considerable time after the attack, and pericarditis with effusion was occasionally observed.

"Erysipelas frequently attacked the convalescents in this species also, and dysentery more rarely.

"In no instance have I met with a recurrence of this disease in the same person, although I watched attentively for

it; but, like maculated typhus, an attack of it affords no protection against the infection of any other species.

"During the epidemic, we treated of this species of fever 1014 cases, of whom there died 74, being a mortality of 1 in 13 and a fraction.

"The table which refers to the periods at which the rigors and crises occur during an attack of Relapsing Synocha extends over a period of two years, and gives the dates of occurrence during each month of these years. It is extracted from the reports of 385 patients, and in its compilation all cases were excluded in which dates were uncertain, or in which the youth of the patients prevented dependence from being placed on the history given of their illness. It contains four columns of figures, marked respectively, 1, 2, 3, 4. Column No. 1 refers to the day on which the first crisis occurred after the first rigor, and shows that none occurred earlier than the third, or later than the ninth day; and that in 23 patients it occurred on the third day; in 74 on the fourth day; in 146 on the fifth day; in 74 on the sixth day; in 38 on the seventh day; in 28 on the eighth day; and in 6 on the ninth day.

"Column No. 2 refers to the number of days that elapsed from the date of the first rigor until the recurrence of the second rigor, and shows that none occurred earlier than the tenth, or later than the eighteenth day; and that in 4 patients it occurred on the tenth day; in 19 on the eleventh day; in 33 on the twelfth day; in 77 on the thirteenth day; in 98 on the fourteenth day; in 89 on the fifteenth day; in 35 on the sixteenth day; in 16 on the seventeenth day; and in 11 on the eighteenth day.

"Column No. 3 was compiled in consequence of the possibility of patients not having stated accurately the date of their first rigor; and as the first crisis and second rigor took place almost invariably in the hospital, it was desirable to ascertain if the interval between them was always the same. It shows that in no case did the second rigor occur earlier than the fifth

day after the first crisis, or later than the twelfth day; and that in 9 it occurred on the fifth day; in 19 on the sixth day; in 41 on the seventh day; in 86 on the eighth day; in 99 on the ninth day; in 73 on the tenth day; in 43 on the eleventh day; and in 8 on the twelfth day.

"Column No. 4 relates to the duration of the relapse or second attack, and shows that a crisis occurred in 37 patients on the first day; in 122 on the second day; in 101 on the third day; in 81 on the fourth day; in 31 on the fifth day; in 8 on the sixth day; in 1 on the seventh day; in 1 on the eighth day; in 1 on the ninth day; and none later.

"The deductions from this table are valuable in the management of an hospital during the prevalence of an epidemic of which relapsing synocha may form a part, as they enable us to decide when a patient may with safety be transferred to the convalescent ward.

"For example, if a patient has a feverish attack in which no crisis takes place till after the tenth day from his first rigor, he may immediately on its occurrence be forwarded to the convalescent ward, without being detained in expectation of a relapse, because column No. 1 shows that no crisis occurs in relapsing synocha later than the ninth day.

"The period of safe transfer may also be decided by column No. 2, because this shows that no second rigor occurred later than eighteen days after the first.

"But, as the poor are often inattentive as to dates, the question can be decided with perfect safety to the patient by the results of column No. 3, because the first crisis will in all probability have occurred in the hospital, and should twelve days have elapsed without a relapse the patient may be removed, as this column shows that no relapse occurs later than twelve days after the first crisis.

"III. *Synocha or Febricula.*—This species was the shortest of any of our fevers, and attended with very little risk to life. It commenced, like the others, with a rigor and the usual febrile

symptoms. It had few, if any complications during its course, which generally lasted seven or eight days, nor had it any sequelæ peculiar to it.

"Lest it might be supposed that it was the first paroxysm of the relapsing synocha, I may add that, until the usual period for relapsing had passed by, we invariably took daily reports of the pulse and other symptoms in our cases.

"Of this species we treated during the epidemic 1238 cases, of whom there died 23, which was a mortality of 1 in 53 and a fraction.

"This fever may recur again and again, and protects against no other.

"IV. *Synochus or Continued Fever.*—The initiatory symptoms are the same in this species of fever as in the others. The feverish symptoms are often intense, the brain a good deal involved, and the tongue dry and brown. It is the ordinary continued fever of our country, and its diagnosis depends rather upon the absence of the symptoms characteristic of the other species of fever, than upon the presence of any peculiar to itself. Its duration is uncertain, varying from fifteen to twenty days, and is often complicated with diarrhœa, especially towards its termination.

"It has no sequelæ peculiar to itself.

"Of this species we treated during the epidemic 970 cases, of whom there died 89, being a mortality of 1 in 10 and a fraction.

"I am uncertain whether it may recur in the same person, but it has no power of protecting against attacks of any other species. I very recently dismissed a patient from the hospital who in March, 1847, had an attack of maculated typhus, in July of the same year an attack of relapsing synocha, and in January, 1849, an attack of synochus.

"*Contagion.*—The influence of contagion in producing the fevers of this country is so generally admitted that it might appear almost unnecessary to produce any further proof of its

power; but having recently seen its influence altogether denied by a writer in your Journal, I constructed a table containing the results of my inquiries in 4600 cases, which table also shows its influence during each month of the last two years.

"As the value to be attached to statistical tables depends a good deal upon a knowledge of the method that was pursued in the investigation, I may state that, when writing the first report of each patient's case after his admission, the following questions were generally addressed to him, regarding exposure to contagion.

"'Was fever in your house? Was it among your neighbours? Did you visit them, or did they visit you? Was it in your district or street, and if so, was there any intercourse? Were you in any place where you were likely to be exposed to infection?' And should a negative reply be received to all these questions, the patient was required to account for his illness by being asked, 'Then what brought on your illness?'

"I have known many show great unwillingness to admit that they were suffering from fever, and have therefore not unfrequently been obliged to correct the information received on my first visit, by that obtained some days later, when the presence of fever could not be denied. I have known, for example, a negative reply to be given to all my questions by a person ill with maculated typhus, who had for weeks previously paid frequent visits to the wash-house of a fever hospital, and also to a friend ill with maculated typhus in the hospital.

"When we consider how very possible it was for persons during an epidemic prevalence of fever to be exposed, without their knowledge, to contagion, by meeting persons from houses in which fever existed, in shops, or other places; the number unable to assign exposure to contagion as the cause cannot be looked upon as large, and the influence of contagion as the chief cause in the propagation of our several fevers, must, I think, be at once admitted.

"It would be a dangerous statement to deny the possibility

of the origin of fever *de novo*, because the same Power that created the combination of circumstances under which it first appeared among men, must of course be equal to their renewal; but when a case of fever has occurred, its capability of being communicated by the sick to the healthy appears to me to admit of no doubt, and such an occurrence can be prevented only by the energetic adoption of measures to insure extreme cleanliness, free ventilation, and frequent changes of bed clothing, the great influence of which in limiting the disease to one member of a family is well exemplified among the richer classes of society, where such measures can be efficiently carried out.

"Of 4600 patients treated for fever in our hospital during the late epidemic, I find that in 1496 suffering from *Maculated Typhus*, 940 were exposed directly to contagion; 131 came from the workhouse, where fever prevailed; 40 from the night and day asylums (institutions established for the relief of the strolling poor), and where fever also prevailed; 17 came from streets or districts where fever prevailed, but said there was no intercourse; 79 assigned cold as the cause; 170 could assign no cause; and in 119 the cause was not noted in our reports.

"In 965 patients suffering from *Relapsing Synocha*, 694 were exposed to contagion; 92 came from the workhouse; 38 from the night and day asylums; 2 had fever in their neighbourhood, but without any intercourse; 28 assigned cold; 67 no cause; and in 44 reports the cause was not noted.

"In 962 afflicted with the *Synochus* or common continued fever, 530 were exposed to contagion; 183 came from the work-house; 36 from the night and day asylums; 10 had fever in their neighbourhood; 27 assigned cold; 78 no cause; and in 98 the cause was not noted.

"In 1177 patients suffering from *Synocha or Febricula*, 567 were exposed to contagion; 231 came from the workhouse; 75 from the night and day asylums; 9 had fever in their neighbourhood; 64 assigned cold as the cause; 162 could assign no cause; and in 69 the cause was not noted in our reports."

From Strangford, county of Down, Dr. Alexander Knox writes:—

"Fever was epidemic, in the spring of the year 1847, in the Strangford dispensary district, containing a population of about 5000 souls. Dysentery had also been epidemic from the preceding year, and continued to prevail simultaneously with the fever; but the persons attacked by the latter disease were, for the most part, apparently in their ordinary state of health. Neither purpura nor scurvy was observed by me in any case; nor, except in one instance, was the fever complicated by the supervention of dysentery. As far as I could ascertain, there was no concurrent epizootic disease. From the number of children in most houses, they appeared to suffer in a greater proportion than the adult population; but no peculiar exemption was enjoyed by either sex, or by any age. As the lower classes of the people in this district were much better circumstanced than in most others, with reference to the provision of employment and food for the people, it was my good fortune not to witness a single case of the epidemic which could be attributed to starvation. I have not the slightest doubt of the disease being contagious; and I have long since so completely satisfied myself on this point, from repeated observations in different epidemics of fever in this country, that I look on it as perfectly ascertained, and take my measures for prevention accordingly. At the same time it is right to state that I do not consider contagion to be the usual, nor even the common mode of the propagation of fever, but I believe that it depends on malific influences, of whatever kind, infinitely more general and speedy in their operation.

"On comparing the fever of 1847 with former epidemics, the points of difference that struck me, as far as the disease fell under my own immediate observation, were the shortness of its course in a few, and its comparative mildness in the generality of cases. In illustration of this fact I may state that of fifty dispensary patients affected with fever not one died, although some of them

had the disease in a very grave form. One patient, with a pulse that I calculated to be about 200, for I could not count it, recovered completely. This man, a schoolmaster, has had fever three times; and his case, and many others in my practice, appear to be a sufficient answer to the notion that typhus attacks the same individual only once in his life. Purpuric spots occurred in about one-third of the cases. The brain was the viscus most frequently affected, deep somnolence being a very common symptom. Disease of the lungs was the complication next in frequency. Epistaxis was rarely if at all observed; and the same may be said of bed-sores and enlargement of the spleen. Relapse, *contrary to what so generally took place in many other districts, did not occur in a single instance.* A difference in the intensity of the disease was very observable, even in members of the same family, in some the symptoms being very slight, in others extremely grave. I have not witnesssed any sequelæ, the recovery being complete. As regards treatment, I only found it necessary to use leeches in two or three cases, and venesection once, with very obvious benefit. Beyond regulation of the diet and the bowels, enforcing cleanliness and ventilation, and the use of diluent and diaphoretic drinks, little treatment was necessary in many cases. Blisters were applied to the nape of the neck, and the scalp was ordered to be shaved, where there was profound cerebral affection. Mercury, except as an aperient, was only used in one case, where inflammation of the brain was present. Opium was unhesitatingly employed after depletion, and found very beneficial where much nervous irritability and sleeplessness were prominent symptoms. Stimulants were rarely resorted to, and the results showed that they were not necessary; in two or three cases only did they seem called for, and then wine and water was administered at regular intervals, in moderate quantities. As far as my observation extended, large doses of wine or brandy were neither necessary nor should I have considered them safe. The lower ranks, from their ordinary regimen, seem to me to be very susceptible of slight stimuli in fever, and could not

well bear, I apprehend, the same line of treatment that might be necessary for the habitual wine-bibber. I have now had pretty extensive experience in five or six epidemics of fever in this and the adjoining county of Antrim, and in none of them have I had occasion to resort to the large quantities of stimulant drinks described by some writers on fever as indispensable. I believe the fever of 1847 was more fatal amongst the better classes, in proportion to the numbers affected; but I have no sufficient record of cases to deduce from them any statistical inferences of value."

APPENDIX TO THE FEVER REPORT ON LEINSTER.

We shall conclude this Report with the following observations on the epidemic fever of 1847–8, by Dr. Robert Law, Queen's Professor of the Institutes of Medicine and of Clinical Medicine in the School of Physic in Ireland, &c.:—

"I regret that I have been hitherto prevented, by circumstances over which I had no control, from answering the queries which you addressed to me in a letter dated August 28, 1848, respecting the epidemic fever that prevailed in this country in 1847 and 1848. I especially regret it lest I should be thought from my silence to undervalue the information to be obtained from such inquiries. I believe that the imperfection of medicine is more attributable to the want of faithful records than to any other circumstance, and that nothing would tend more to its advancement, both as a science and as a practical art, than the recorded observation and experience of disease and its treatment. The medical profession might take a useful hint from the profession of the law in this respect. The numerous volumes of reports indicate the degree in which the legal profession values such information. When a new case presents itself to the lawyer, he has his 'Reports' to apply to, and then can compare the features of his case with others, see how far they agree or differ, and thus ascertain, in legal parlance, 'the law of the case.' Similar cases are similarly adjudged. If medical reports were as full and complete, the phy-

sician could know where to apply when any new outbreak of a disease presented itself. But unhappily such is not the case. And in nothing is this deficiency more apparent than in the scanty records that we have of the epidemic diseases which have at various times visited this country, and of which so little notice has been taken that on the appearance of a new epidemic the physician has but little aid from the experience and observations of others exercised on former occasions, but is thrown on his own resources, which to any individual, no matter how favourably circumstanced for such a task, must be comparatively limited, and can only embrace what has occurred in his own immediate locality, and, therefore, want that variety and diversity derived from variety and diversity of locality, &c. It is the contribution of individual experience from different localities, exhibiting the special circumstances and modifications of disease in each locality, that medicine requires as the material to raise it, as a noble science and a useful art, to that elevation to which its high objects entitle it.

" The mode that you have suggested for obtaining this object, by submitting to the members of the profession, differently circumstanced and located through the country, a number of judicious and well-chosen questions, is admirably calculated to produce the effect; and I trust that it will issue in leaving on record much valuable information, which may afterwards be referred to with great advantage, both in regard to the nature and character of the epidemic as well as to its treatment.

" It is incumbent on those who are jealous for the credit of medicine, and who would vindicate it from the imputation with which ignorance so often assails it, of uncertainty in its practical application, to have the published records of their observation and experience to refer to in proof that disease so changes in its nature and character as to require corresponding change of treatment; and that, if medicine is to be, as it ought to be, and as it is competent to be, a real blessing to mankind, it ought to know how to free itself from the fetters that system

would impose upon it, and with versatile aptitude accommodate itself to disease, which is and must be as various in its nature as the elements out of which it arises, and, therefore, require as various treatment. Of the fact of a revolution in the character and nature of disease every one who has had opportunity of observing it for the last twenty years must be aware; it may be said to have undergone within that period a complete change. We confine our observations to our own experience; and having been constantly in the same locality, and being during all that time connected with a large hospital, we have been favourably circumstanced for observing the various changes disease has undergone. The first epidemic fever of which we had personal experience was in 1826–7. Its type was essentially sthenic; it generally ran its course in seven days, and usually terminated by a distinct crisis, preceded by the characteristic *perturbatio critica.* The most common critical discharge was perspiration, the next most common was epistaxis, the rarest was intestinal hemorrhage. At this time petechiæ were very rare, and, from having been hitherto only observed in cases associated with dangerous symptoms, created considerable alarm; so that to pronounce a person in 'spotted fever' was regarded as an announcement of almost certain death. The subsequent frequency of this phenomenon, and in company with comparatively mild symptoms, deprived it of the terror that had till now attached to it. The treatment applied to this fever was more or less decidedly antiphlogistic.

"Perhaps there was no physician who had a higher reputation for his judicious and successful treatment of fever than the late Dr. John Crampton; and his almost constant practice in this fever was to bleed from the arm, even when there was no complication of local inflammation. Among those who were opposed to bleeding some carried on a daily system of purgation, while others directed their remedies more particularly to the skin. This type of fever prevailed until the cholera visited these countries in 1832.

"Before this period the influenza was little more than known by name. Its desperately overpowering influence had not hitherto been felt. It now spread in a way in which it had never been known to do before, and assumed a variety of shape and form quite new to our experience. Its victims were calculated as more numerous than even those of the deadly cholera.

"Hitherto scarlatina had been a comparatively mild disease. Prudence, more than the urgency of its symptoms, often made us impose on our little patients a restraint of which the little inconvenience that they felt from their slight indisposition made them impatient; nor could they understand why they should be confined to bed. But now it assumed a character of violence to which we had hitherto been utter strangers, sweeping away entire families of children, and not sparing adults. Nor was this malignity measured either by the sore throat or the extent of the eruption; it was the fever that accompanied it that stamped it with its dangerous character. In many of the worst and most rapidly fatal cases there was scarcely any sore throat or eruption. In some cases there was no sore throat, while there was a cutaneous efflorescence; in other cases again there was sore throat and no eruption. We met with one remarkable case where there was neither eruption nor sore throat, but in which the fever identified the disease with the fever of the scarlatina then prevailing. We therefore inferred that, as with measles, the eruption is not essential to the disease, so in scarlatina the disease might be present without either sore throat or eruption.

"Up to this time small-pox in persons vaccinated was so rare that it was thought that the disease, when it did occur, must be due to the operation of vaccination not having been perfectly and carefully performed. The fallacy of this view might have suggested itself, even when the cases were rare, from the difference between the disease in the vaccinated individual and the natural small-pox, a difference which would

not have existed had the operation been imperfectly performed. But when, as afterwards occurred, small-pox spread as an epidemic, then the most sanguine advocates of the protective power of vaccination were constrained to admit that they could no longer charge the disease on want of due care in the operation of vaccination. My own conviction is that the protective energy of vaccination was weakened by the mysterious change that occurred in all diseases at the time.

"From this period also a remarkable change took place in what we call idiopathic fever; and, although it presented itself under a great variety of aspects and phases at different times, it never assumed the character under which it appeared previously to the appearance of cholera. Since then it has been invariably of a low, typhoid, adynamic type. It has always run a more protracted course than it did before, nor has it ever exhibited what could be termed a decided crisis, except in the last epidemic, where the appearance of crisis in a few instances made us imagine that the cycle of disease marked by a low typhoid or adynamic character having completed its course, we were returning to what we had before been accustomed to. This view, as we shall afterwards observe, was but very partially true. The usual progress of fever, since the period to which we have alluded, has been, for the symptoms daily to increase in intensity, and daily to assume a more alarming aspect, till they had attained their *acmé*, and then either terminate fatally, or as gradually abate somewhat of their severity, and the patient thus creep through a tardy convalescence. While the fever has ever been true to its adynamic or typhoid type, it has exhibited much variety in the secondary lesions that it has presented in various epidemics. The most remarkable among these secondary lesions has been the intestinal affection, whose frequency and intensity have induced many pathologists, especially on the Continent, to believe that what had hitherto been considered idiopathic fever is a mere figment; that all fevers are symptomatic of some local lesion; that the designa-

tion " typhus fever" ought to be expunged from nosology, and its place be occupied by enteritis, mesentero-enteritis, follicular enteritis, dothinenteritis, &c. The Irish pathologist, who, perhaps, from the circumstances and impoverished condition of that class amongst which fever is seldom absent, is placed on a vantage-ground for learning by continued experience how far any local lesion is so constant as to be entitled to be regarded as the essential element of fever, still maintains the distinction between idiopathic and symptomatic fever, regarding the local lesions as merely accidental complications, and often not present. Thus has he, if not often, at least sometimes, found that in an epidemic fever, whose prominent character was the intestinal lesion, if death occurred within a few days after the seizure, which it occasionally did, in such cases he in vain looked for evidence of disease in the intestine; it was not to be found. He did not even find that peculiar projection of the mucous membrane corresponding to the groups of enlarged subjacent follicles, which constitutes the early stage of this complication, and which, while it exhibits itself in this form in the portion of the intestine nearest to the stomach, acquires a more decided inflammatory character as we pursue the tract of the intestine till we come near the cæcum, where we generally find extensive ulceration. In fact death came on too quickly to allow the intestinal lesion to develope itself. They, then, who maintain the dependence of the fever on this lesion, must, if they are honest, allow that in some cases it is not present, and that it therefore wants the essential character of the *causa proxima quæ præsens morbum facit, sublata tollit*, or else they must abide by the alternative that the effect precedes the cause, and in some cases the cause has not appeared at all(*a*). That this intestinal lesion

(*a*) Rokitansky, while he maintains the dependence of typhus on the intestinal lesion, confesses that sometimes there is no such lesion to be found, but relieves himself of the embarrassment that such an apparent inconsistency would create with an ordinary person, by the gratuitous assertion that there may be an arrest of development of the local affection, or that it may run its entire course in the blood. *Credat Judæus!*

is very frequently present in fever we readily admit, but we only allow to it the place and importance that we give to other lesions that we also found to complicate the original fever, that of being a mere accident, although strikingly modifying the original disease.

"Among these secondary affections or accidental complications, the most conspicuous was the intestinal, either alone or alternating with cerebral affection. This complication was often found to be extremely embarrassing, and required to be treated with much care, for the relief of one set of symptoms aggravated the others, so that the sudden check to diarrhœa seemed to concentrate all the energy of the disease on the brain. At other times the head alone was affected, and perhaps it was now we were first taught that stimulants, especially wine, so far from being contra-indicated in fever with cerebral excitement, even in its earliest stage, were actually required. We had already learned that the delirium which comes on in the advanced stage of fever, when debilitating causes have had time to operate, requires to be very differently dealt with, from the same symptom appearing at an early stage of the disease, and then we account for it by charging it upon what we term determination of blood to the head. But to meet this symptom with stimulants, when it appeared at nearly the commencement of fever, was a new point of practice.

"Affections of the respiratory organs, either as bronchitis or pneumonia, now also frequently presented themselves as a complication. The pneumonia complication, at least under a particular form of it, was a very grave one, and not unfrequently ended fatally. We allude to cases where the lungs became almost all at once solidified, not as in common pneumonia, where it, as it were, dwells upon the first, or hyperæmic stage, and then gradually runs into the second stage, or stage of hepatization. But here it appeared as if all at once the disease hurried into what is called the third stage. A remarkable feature of this pneumonia was that it affected more frequently the upper part of the lungs.

"The first case that occurred to us exhibiting the dull sound on percussion under the clavicle, and the characteristic muco-crepitant râle, made us suspect that fever had attacked an individual already labouring under phthisis pulmonalis. And it so happened that the individual was not in a condition to give us much information on his previous health. However, although his fever was an extremely severe one, yet he recovered; and as the febrile symptoms disappeared, and his condition improved, the lung affection also shared in the amendment, and ultimately left no trace of disease behind. This was conclusive proof that there was no phthisis here. As this local lesion was one indicating the most asthenic type of disease, it is not to be wondered that we had opportunity of ascertaining by *post mortem* examination what its real nature was, and found it to be what Laennec designates, but, I conceive, erroneously, the third stage of pneumonia. My objection to Laennec's regarding this peculiar pathological condition of the lung as the third stage of pneumonia is, that it conveys the impression that the disease has regularly passed through the first and second into another stage, and that this is its normal course. This is what we do not believe. As little do we consider it the natural tendency of adhesive inflammation in the external areolar membrane, to run into what we call diffuse inflammation, as we consider it the natural tendency of hepatization of the lungs to run into this suppurative pneumonia. We, in fact, regard this pneumonia as essentially diffuse inflammation of the lungs, agreeing with diffuse inflammation elsewhere in its anatomical characters, these consisting in purulent infiltration, not, as asserted by Laennec, into the pulmonary structure, but into lymph deposited in this structure. This species of pneumonia also occurs in a diseased condition of the system, analogous to that in which diffuse inflammation in other parts is met with.

"Bronchitis, under various forms, constituted a very frequent complication of this fever. In some cases it presented as capillary bronchitis, and exhibited itself at a very early

period of the disease. We have known instances where the similarity of its signs to those of pneumonia, as well as the congested face, has led to the mistake that it was pneumonia, and, therefore, ought to be treated by depletion, by bleeding, a practice which was attended with the most disastrous results. If measles happened to prevail at the time that fever also was rife, while the fever of the exanthema assumed the type of the prevailing epidemic, it did not exhibit the peculiar local complications of the fever at the time, but presented its own bronchitis, under circumstances of peculiar aggravation. Often was the fever prolonged by the bronchitis, which in many cases also continued long after every febrile symptom had subsided, and, terminating in protracted bronchorrhœa, frequently made us fear that it would issue in phthisis, an apprehension that was extremely rarely realized. The inhalation of turpentine vapour almost invariably succeeded in checking the excessive bronchial secretion.

"While the diseases that come more immediately within the observation of the physician were seen to have undergone this remarkable change of type, the same change of character was noticed amongst surgical diseases. This particularly struck the late Mr. Colles, than whom no one observed disease with more accuracy and sagacity. He remarked to the author of these observations how rarely he met with disease that required or admitted of the use of the lancet; to use his own expression, he missed the "honest inflammation of former times." This change exhibited itself in the low typhoid erysipelas that appeared epidemically from time to time. Now also diffuse inflammation, under its various shapes, was more common, as also phlebitis, purulent arthritis, and all the category of diseases which are, *par excellence*, designated diseases of constitutional irritation. About this period we met with a remarkable case of purulent pericarditis, with the external and constitutional symptoms of diffuse inflammation. There were the pustule and swellings, with the blush of inflammation, about the joints.

The case seemed to us to establish a relation between purulent arthritis and rheumatism; it suggested to us that they were the same disease modified by the fever, which was typhoid in the former.

"The routine of disease was now interrupted by the appearance of a new malady in this country and Scotland, and partially in England; we allude to purpura or scurvy. This disease was evidently connected with the change that ensued on the failure of the potato. It in all respects resembled the disease met with among sailors, and in most cases yielded to exactly the same treatment.

"There was a peculiarity that marked some cases of fever that occurred at this time, which consisted in a group of symptoms pointing to an affection of the brain and spinal marrow, thence designated cerebro-spinal arachnitis. There were few medical men connected with hospitals who had not occasion to observe one or more of such cases. These cases were very novel, and at first embarrassed the physician, presenting themselves under an aspect little calculated to throw light upon their exact nature. My friend Dr. Darby first noticed the disease in this country; the cases that he first saw resembled cases of cholera. Of four cases that occurred to me, three laboured under constant vomiting, and exhibited some features of cholera.

"I now come down to the fever which forms the subject of your inquiries, and shall direct my attention to and furnish answers to those questions that marked that fever. I never saw one exactly similar. As I observed already, the appearance of a crisis by perspiration led me to believe that we were returning to the fever with which I had been familiar in our early practice, but of which I had completely lost sight. However, the cases of crisis were extremely few, and most frequently the crisis was not complete, and seemed only to lead to a mitigation of the symptoms; and it was not till after several abortive efforts that anything like a complete crisis took place.

"The prominent symptom of the disease was an overwhelming feeling of prostration of strength and depression of spirits. In this respect the disease resembled aggravated influenza. The fever was essentially of an asthenic or adynamic type. I never saw any fever in which the advocates of the theory of the idiopathic nature of this disease had more countenance for their view, in contrast with those who maintain its constant dependence on some local lesion. These latter would have been puzzled to find out an organ, or set of organs, upon whose disease to hang the fever. It seemed as if the morbific influence or agent did not, as in former epidemics, concentrate itself upon any particular organ or apparatus, but assailed all, spreading itself over all, and exerting over all a debilitating effect. This may account for the small mortality, as the *onus* being shared by many made it more tolerable than if a single organ had to bear all the burden of the disease. In the midst of this small mortality we met with cases which ran their fatal course in a shorter time than we had ever before seen.

"In one case, from its commencement to its fatal termination, the disease only occupied four days. The case to which we allude was a man aged forty years, of a full habit, who exhibited a stupified aspect, like one in a state of intoxication; his eyes were deeply suffused. The surface of the body was of a greenish yellow hue, the colour of tallow. The pulse was scarcely to be felt at the wrist, and the stethoscope indicated an extremely feeble action of the heart. No stimulants, either applied externally or given internally, appeared to produce the slightest result or response. The effect in this instance resembled that of a strongly concentrated poison, acting with overwhelming power on all the energies of the system, and deadening them to every stimulus. Here, if the morbific impression was made on all the system alike, all was equally overpowered by it.

"Our observation, that on no one system more than another did the morbific influence act, requires some qualification. The most common and the loudest complaint of our patients was an

aggravation of what the subject of fever generally describes as pains in the bones, but which really means pains in the course of the spinal nerves. In former fevers this complaint was seldom more than that of a contused or bruised feel, or of such a sense of discomfort or fidgetty restlessness as the French so significantly express by the term *malaise*. Here, however, the individual in many cases seemed to suffer as intensely as in the severest case of acute rheumatism. These pains were more or less general in different patients. In some they affected the back of the head and neck; in some they only ran down the legs; while in others they spread themselves through the whole body, and, embracing the sides, imparted the sensation of painful constriction. The nape of the neck and across the loins were the points of the spine to which the patients most frequently referred their pain. When it occupied the former position, which it did in many cases, we regarded it with some apprehension, from its being the starting point of that formidable disease, cerebro-spinal meningitis, into which we are sure it would have passed had it not been arrested by treatment. The means we employed to relieve these pains, and which were attended with constant success (indeed we would say that there was not a single case in which they did not fulfil their purpose), was to apply leeches in such numbers to the spine as the extent of the pains required. If the pains extended to all the body, and to both the upper and lower extremities, the leeches were directed to be applied all along the spine. If the pains were confined to the upper or to the lower extremities, then the leeches were only applied to the upper or lower portion of the spine. In some cases, in order to prove the effect of the leeches, we applied fewer than the extent of the pains required, and found that there was a relief to the pains in the parts supplied by nerves from the portion of the spine to which the leeches were applied, while in the other parts they remained in *statu quo*, and waited for the application of the leeches to their portion of the spine for their removal.

"It had long been our practice in former fevers to apply leeches to the nape of the neck in cases of occipital headach, and to the loins when patients complained of pain in this situation, which they so often do. We had often, in our clinical instruction, pointed our pupils' attention to the localities best situated for the application of leeches to relieve the different kinds of headach of which patients complain in fever, a point which we felt had not been sufficiently attended to by practitioners. Thus we taught them to apply them to the nose when the patient complained of supra-orbital headach, which is almost the constant complaint in influenza; to the temples in case of throbbing of the temples; behind the ears when the patient complained of a sense of weight and fulness of the head generally; to the nape of the neck when the pain was referred to the back of the head; and, again, to the loins when the pain was complained of here. In this last situation we do not believe we ever saw leeches applied to relieve the pain so often complained of in fever. Nor could we understand why, for certainly it is often severe enough to render its removal a great relief to the patient. We suppose the reason why the headach commands attention, while the lumbar pain is overlooked and left to itself, is the reasonable apprehension lest the brain should suffer, and therefore art must interfere and throw its shield round this important organ, while there is no such apprehension for the spinal marrow. If this be the reason of the difference of treatment of the two complaints, we have not acted upon it, ever considering the relief of the lumbar pain, if at all severe, motive enough to justify the application of a few leeches, which could do no harm. But we did learn from a case which recently occurred to us, that if headach required the interference of art to prevent the brain receiving damage, the pain of the back also required looking after, lest the organs more or less intimately related to it should suffer. The case to which we allude was that of a young man, John M'Cushion, who, when admitted into hospital with slight febrile symp-

toms, complained chiefly of pain across his loins, for which we directed leeches to be applied, which completely removed it. He appeared to be getting quite well, and was placed on diet, when he again complained of pain in his back, but so slight that we did not think it necessary to repeat the application of leeches. The skin presented a slightly jaundiced hue. The next day we found him deeply jaundiced; pulse 180 in the minute. The nurse told us he had been raving all night. He was now in a heavy, lethargic state, approaching to coma, and did within a few hours pass into profound coma, which speedily terminated in death.

"Examination of the body exhibited the liver and spleen much enlarged in size and congested, and so softened in structure, that they seemed as if they had been soaked in blood. Their condition was such as seemed to warrant us in regarding the case as apoplexy of these two organs, a term perhaps more strictly applicable to their condition than the corresponding state of the lungs to which it is now so generally applied. The suddenness and violence of the seizure certainly identified it more with cerebral apoplexy, and therefore gave it more title to the designation of apoplexy than belongs to the pulmonary lesion, which seldom shows itself with such suddenness or violence.

"Although this was the only extreme case of this kind that occurred to us, we did meet with so many cases of dull pain in the left hypochondrium with dulness on percussion, and in which the stethoscope proved the integrity of the lung, that we had no doubt of the frequency of congestion of the spleen. Nor was this the only feature of resemblance that we thought we discovered between this fever and ague. We do not mean that it had anything of an intermittent character, but in its affecting the ganglionic and spinal rather than the cerebral portion of the nervous system. This view led us to adopt a modified treatment, which seemed to succeed in the cases in which we

employed it. This modification consisted in the combination of James's Powder and quinine.

"As we never before witnessed anything to equal the severity of the pains complained of in this epidemic, so we never witnessed anything in medicine more signal or striking than the relief afforded by leeches applied to the spine in such cases of what we would designate pseudo-rheumatism. An instance of this was exhibited in the case of Anne M'Guinness, aged 25. She, with her sister Mary M'Guinness, aged 20, was admitted into hospital. The younger had had a very severe fever in Cork-street Hospital, three months before, and had suffered much from a bed-sore occupying an unusual position, namely, the left side of the body, below and external to the left mamma(*a*). Her fever on this occasion was of a much lower type than that of her sister's, which was of the mildest kind, requiring only some diaphoretic medicine. In the course of the night of her admission, however, she was seized with most violent pain along the vertebræ and the loins, and extending down the legs. The next morning we found her in great agony from these pains. We directed leeches to be applied to the spine. They afforded her almost immediate relief. She recovered rapidly, and left the hospital sooner than she ought. She soon returned to us in fever, and suffering as severely from the same kind of pains as before, but situated higher up, extending along the side of the neck and the arms. The recollection of the relief she had formerly obtained from the leeches made her most urgent that

(*a*) "It is an interesting question connected with the statistics of fever, how far one seizure renders the system more or less susceptible of a second. If it could be established that one attack did secure the system against a second, the fact would favour the view of the pathologists who are disposed to regard typhus fever in the light of one of the exanthemata. Although we are not amongst those who hold this view of the nature of fever, we do believe that one attack of it does, to a certain extent, fortify against a second. How few medical men have not had their seasoning?"

they should be applied again, which was speedily done, and with the same relief as before. This was equally remarkable in the case of a young man, named John Chittim, aged eighteen years. He had gone out of hospital after having had a protracted fever, but not marked by any peculiarity except the characteristic prostration of the epidemic. After being some time out he was re-admitted with pains more extensive and more acute than we had ever witnessed in the severest attack of rheumatic fever. The head alone was not affected, but both the upper and lower extremities and sides of the trunk were. The pains in this last situation he compared to the most distressing sense of painful constriction. In this case I directed the leeches to be applied to the spine in two batches, in order to see the effect, and found it just as we expected, the leeched parts relieved, and the unleeched parts as painful as before. We found tincture of iodine applied to the spine, and along the course of the pains, nearly as efficacious in relieving the pains as the leeches, but not to the full extent. We were quite sure of the one, as we did not experience a single case of their failing to yield the most decided relief. The low asthenic type of the fever might have led us to suppose that the application of a large number of leeches would have produced great weakness and debility, but this did not prove to be the case. And this strangely contrasted with the great prostration that ensued from our taking so small a quantity as six ounces of blood from the arm of a man in the fever. The circumstances under which the blood was drawn were as follow:—MM. Rodier and Gueneau de Mussy, who came to this country commissioned by the French government to investigate the prevailing fever, accompanied me in my visits at Sir Patrick Dun's almost daily. M. Rodier, to whom medical science is so much indebted for the information he has contributed on the changes the blood experiences in disease, was especially anxious that I should bleed a patient to furnish him with the means of prosecuting his favourite inquiry. It was a long time before I met with a

patient in whom I could feel myself justified in yielding to his request.

"At length there was a strong, healthy man, in whom the disease seemed to exhibit somewhat less of its low depressing type, from whom I thought I might, without running any risk, allow a small quantity of blood to be taken. Accordingly, I directed six ounces to be drawn from the arm. This was done at two o'clock in the afternoon, and at nine o'clock in the evening, the resident apothecary, when making his ordinary visit, found him so low and exhausted that he was obliged to give him brandy to prevent him sinking from exhaustion. When I saw him the next morning I found him in a state of extreme prostration; his pulse very weak and compressible. He exhibited the pallid, sallow, subicteric complexion, characteristic of hemorrhage. We were obliged to continue to give him brandy and wine, and at length, after a tedious convalescence, he quite recovered. I felt I had done enough (*sat superque satis*) for science. It was the last venesection I allowed to be performed on any of my fever patients. The experiment strikingly illustrated how different are the results of local and constitutional bleeding. For although it might be urged that depletion by leeches might have been followed by the same degree of exhaustion in this case as that consequent upon the venesection, or there might, perhaps, have been some peculiarity or idiosyncracy in the individual, we can only assert that the appearance of the individual was such as to make us believe that no injury would be likely to result from taking from him a small quantity of blood, much less that he should be almost completely prostrated by no greater loss than a young child would, under common circumstances, bear with impunity. And to suppose that an equal hemorrhage from leeches might have produced the same degree of exhaustion would have been contrary to the analogy of the numerous other cases in which we had occasion to employ them without their leaving any sense of weakness behind. We cannot help

remarking upon the change of complexion that ensued upon the very moderate venesection, proving it to be something more than a mere transient nervous feeling; that it was a real change produced in the constitution of the blood, in which the physiological relation between the hæmato-globulin, or red particles, and serum, was altered at the expense of the former; that this fluid had undergone the ordinary change that it does undergo in extensive hemorrhage, chlorosis, malignant disease, &c. The effects of this experiment proved, in addition to every thing else connected with the disease, its extremely asthenic type.

"Almost the only remedies we thought of employing were stimulants in some form or other. The most common stimulants were either brandy or wine, with our ordinary cardiac mixture, composed of camphor mixture, carbonate of ammonia, and Hoffman's anodyne. We generally ordered diaphoretics, viz., James's Powder, water of the acetate of ammonia, &c. In this respect this epidemic differed from all preceding ones, that there was scarcely a case in which we could not freely give either brandy or wine. Every practitioner of any experience in fever knows in how many instances he feels wine or brandy to be almost the *unicum remedium* for his patient, yet the remedy cannot be borne, from the amount of nervous disturbance that it produces, and which renders its continuance quite inadmissible. But rarely did such a case present itself to us in this epidemic, and in consequence its treatment was extremely simple. We never met with an epidemic more calculated to sustain the pretensions of the Brunonian theory of fever. Some few of the cases were more like what Dr. Armstrong described as congestive fever than any we had hitherto met with. This resemblance exhibited itself in congestion of the surface, in a kind of cyanosed appearance of the body, not like either the effects of petechiæ or maculæ, but what we observe as the effects of intense cold While this was the state of the surface, the respiration was laboured and oppressed, and the stethoscope indicated, by the

presence of crepitus, the existence of pneumonia, or perhaps more properly congestion. Did the presence of pneumonia or congestion cause us to modify our treatment, or to withhold, or even to lessen the amount of the stimulant? By no means. We gave the stimulant at least as freely as if there was no pneumonia, and witnessed as the result both the disappearance of the lividity and congestion of the skin, and a most decided relief to the oppressed breathing, and removal of the crepitus. A striking case of this kind occurred in a youth, John Hackett, aged 18. There was universal blueness and congestion of all the body, and of both the upper and lower extremities. There was, at the same time, dyspnœa, and the stethoscope indicated crepitus in both lungs. In this case there were the ordinary febrile symptoms of the epidemic, and the characteristic prostration of strength and depression of spirits. Being anxious to exhibit to the pupils the effects of wine alone, we purposely withheld every other means, although we should have, no doubt, derived benefit from either sinapisms or blisters applied to the chest, as co-operating with the internal stimulant. But if we had applied these we should not have been able to prove, as conclusively as we expected we should be able to do from the use of the wine alone, that the pneumonia was a state of asthenic congestion, requiring a special modification of treatment. Under the use of wine alone the pulse became much less frequent, the skin much less congested, the lungs much more free, and all evidence of congestion, as evidenced by the presence of crepitus, disappeared. We adopted exactly the same treatment in many cases where delirium was present, and with the same beneficial results. How to deal with delirium in fever is perhaps the most difficult point in medicine, and the one which, more than any other, proves the skill and tact of the practical physician. Experience alone can teach it; and no one's experience will serve for another. The great difficulty of medicine consists in this, that exactly the same result will often depend upon the most opposite causes; and of course it is of the utmost impor-

tance to distinguish between these causes, as the treatment of the results must be as opposite and different as they are. Every practitioner knows on what different conditions and states of the system dropsy depends,—that it may depend on anemia or on plethora. Who would be absurd enough to apply to this symptom the same unvarying treatment, irrespective of its cause? Yet this irrational practice is pursued and recommended by those who urge that the cause of disease generally is of so mysterious a nature that it is in vain, in most cases, to look for it, and even if found it does not, in its practical influence, repay the trouble of the inquiry. As palpable an instance of the dependence of the same symptoms on different, or even opposite, conditions of an organ is afforded by delirium in fever, a symptom connected with the most opposite conditions of the brain. Generally the delirium that comes on in the first days of fever is the result of determination to the organ, and its treatment is generally understood; the treatment of that which comes on later, when the system is exhausted by disease, is also now better understood than it was formerly. It is now known to depend upon a condition of the brain somewhat similar to the state of this organ from hemorrhage or any other cause productive of general exhaustion, and experience has set its seal on the value of stimulants. But this epidemic presented the peculiarity of exhibiting this symptom at an early stage of the disease, under the aspect, and requiring a treatment suited to it when it occurs later.

"Our pathological notions upon the subject of inflammation have undergone, in latter years, very decided modification. The change to which I allude consists in the acknowledgment of the fact that the intensest inflammation may arise in the weakest state of the system, and find its remedy in restoring the tone of the system. I had frequent opportunities of bringing under the notice of the Pathological Society, at their meetings, specimens exhibiting appearances of vascularity, such as

we had been accustomed to regard as characteristic of high inflammation, and which we knew must have taken place when the body was under the greatest weakness. I shall only adduce one case in illustration. A woman aged 48 came under my care, for general dropsy and oppressed breathing, which stethoscopic examination proved to depend upon effusion into the left cavity of the pleura. Under treatment her condition improved for a time, but the improvement was but transient. Her state soon became worse than before; her breathing became more oppressed than ever; she could no longer lie down in bed. Percussion and auscultation indicated a great extent of effusion into the left cavity of the pleura. Her aspect and the low type of her symptoms made me suspect the presence of some malignant disease. We thought it possible that the left lung might be the seat of this disease; but this could only be conjecture, and did not admit of any proof, as the extent of the effusion so separated the lung from the side that its condition could not be ascertained by the stethoscope or otherwise. It was the analogy of other cases that suggested to me the suspicion of malignant disease. Examination after death exhibited extensive sero-fibrinous effusion into the cavity of the pleura. A thick covering of lymph, deeply stained with blood, and of a bright florid colour, coated the entire pleura covering the left lung, especially internally, where it had contracted an adhesion with the pericardium. There was moderate effusion into the right pleural cavity, its pleural investment was also coated with lymph, exhibiting exactly the same appearance of blood in it(*a*); and in the portion that dips into the sulcus separating the upper and middle lobes, the false membrane contained small miliary tubercles. There were small crude tubercles in the top of the right lung, in the midst of a deeply congested condition of the pulmonary parenchyma.

(*a*) "The appearance was such as would be regarded as hemorrhagic pleurisy."

"If we had only seen the *post mortem* appearances in this case, and had never seen the subject during life, and had been asked to form our judgment of the symptoms from the appearance presented by the pathological specimens, we should not have hesitated to express our conviction that there must have existed symptoms indicating high inflammation. Yet such was not the case. No symptom during life prepared us for the *post mortem* appearances. What are the inferences deducible from this case? They are these, that appearances indicating high inflammation, and involving the most important organs of the body, may develope themselves in the most damaged condition of the system, and by their absence of symptoms give no evidence of the existence of such inflammation. The low, depressed state of the system, which made us suspect malignant disease, was attested by the development of tubercles both in the lungs, in the midst of pulmonic structure in the condition that we regard as the first stage of pneumonia; and in the midst of the false membrane, an unequivocal result of inflammation. And if, at the same time that these low inflammations existed, there was another whose anatomical characters alone seemed to intimate a higher grade of disease, we cannot but believe that our notions of disease drawn from anatomic characters solely must be in some cases deceptive, and cannot be safely trusted as the grounds of treatment. We have already digressed more perhaps than we ought from our original subject, seduced by a point of great pathological and practical interest, and not yet sufficiently appreciated.

"We revert to our treatment of the fever by stimulants. It was a constant remark of M. Gueneau de Mussy, who attended my visit with a zeal and diligence that would have done credit to the most ardent student, and whose life had well nigh been forfeited in this hazardous service, *Si l'on avoit ces malades dans les hopitaux à Paris on les saigneroit, mais vous leur donnera du vin, et on se guerira.* At this time the proportion of our mortality was small beyond all precedent, not amounting to

two per cent. Nor was this because the fever was a mild one, for such was not the case, as no fever attended with such complete prostration of strength could be considered mild, but because no vital organ was involved, and therefore no obstacle existed to our employing the means that the primary fever required.

"We never encountered an epidemic fever in which there were fewer cases of cerebral excitement; yet there were some cases, and some of these were cases which, while they required stimulants, could not bear wine. To these I gave tartar emetic in cardiac mixture, sometimes alone, sometimes combined with opium, and always with decided benefit. To the good effects of the combination of tartar emetic with opium I have already adverted in my essay on fever, in the twelfth volume of the first series of the Dublin Journal; and in a lecture published in the eighteenth volume of the London Medical Gazette, in 1836, I have proved my claim to having been the first to use it in the treatment of delirium tremens; and if any benefit has resulted from its more extended application to other pathological conditions, I must arrogate to myself the merit that has accrued to medicine from its more extended use.

"As in former epidemics, the fever seemed to be modified by the rank and condition of the patient. Those in better circumstances generally exhibited a worse type and character of disease. There is in Dun's Hospital a pay ward, for admission into which a small sum is charged. This ward is generally occupied by a class somewhat above the common run of patients; in it the worst cases of fever were generally found. They ran a longer and more protracted course. The stimulant did not produce the same effect on them as it did on the poor patients, probably because they had been already habituated to it.

'Tibi quidnam accedet ad istam,
Quam validus præsumis mollitiem.'

"We have already remarked that there were very few

cases of complete crisis, but several cases where there were as many as three or four imperfect crises, the disease at length disappearing. It seemed as if the energies of the system were unable by one effort to fling off the disease, and must needs by repeated attempts accomplish what it failed to do in a single one; and that this should be the case we can easily understand from the extreme prostration that marked the disease.

"We ought to have noticed amongst the symptoms one which occurred rather frequently; we allude to distressing irritability of the stomach. In some of these cases the discharge of a quantity of bitter fluid from the stomach appeared to act as a critical discharge, being followed by a marked mitigation of all the febrile symptoms, the leading one of which had been what the French so significantly describe as *embarras gastrique*. The remedies we found to relieve this irritability were,—ice, a blister sprinkled with morphia applied to the epigastrium, and a mixture containing five ounces and a half of infusion of mint, one drachm of liquor of potash, twenty drops of sedative liquor of opium, and three drachms of tincture of orange peel. One or other of these means generally succeeded in relieving this often most distressing symptom.

"From the frequency of relapse, we soon learned the prudence of keeping our patients in hospital till their convalescence was quite established, which in many cases was no easy matter. In most instances, where they left before we deemed it advisable that they should leave, they returned, often deeply lamenting their waywardness and imprudence, the second attack being sometimes, although not generally, more severe than the first. Two relapse cases exhibited to us the most striking specimens of those pseudo-rheumatic pains to which we have already so often alluded. One case far exceeded the other in its duration, and also in the symptoms exhibited during its protracted course. It was the case of Mary M'Dermott, aged 25, a servant. She was altogether ninety-two days in hospital. For a considerable time her illness consisted of

a kind of intermittent cerebro-spinal meningitis, a regular succession of attacks assuming a variety of form, and exhibiting various symptoms at different times. At one time she complained of most distressing pain in the back of the neck, extending along the arms even to the fingers. In another attack she lost the power of articulation, and her memory seemed to fail. We successfully combated these attacks with leeches, and mercury exhibited so as to touch the gums. Many of the symptoms present in this individual, and in others, strongly reminded us of what we had observed in cases generally regarded as hysteria, and therefore looked upon as disease "*nullius certæ sedis*," but to which our increased pathological knowledge, especially of the nervous system, has enabled us to assign a fixed locality. To this also we have been helped by the results of the application of remedies. The practical physician knows well the value of mercury in positive cerebral disease. We have already, in the former Series of your Journal, recorded our experience on this subject—an experience which our practice has confirmed. If we find that the disease which we call hysteria exhibits itself by symptoms indicating an affection or implication of a portion of the nervous system as palpably and unequivocally as those symptoms which we have no hesitation in referring to an actual disease of the brain, and if we apply to the so-called hysterical affection the same remedy or remedies that we have successfully applied to the cerebral affection, and with the same successful result, does it not at least argue a strong presumption that there exists a close relation, if not an actual identity of nature, between the pathological conditions of the two portions of the nervous system, giving rise to similar symptoms and amenable to the same treatment; and that, if there be actual disease of the brain, there is also actual disease of the portion of the nervous system whose derangement constitutes what we call hysteria? We adduce the following very interesting case in proof of our remarks:—Eliza Warren, aged 26, of an irritable temperament, had been often under our care

in hospital for hysteria, under various modifications and forms. At one time, pain under the left clavicle, with comparative dulness on percussion, and feeble respiration, with hæmoptysis, excited the suspicion of incipient phthisis pulmonalis. At another time she had uterine hemorrhage so profuse and so prolonged that it was supposed there must be some organic disease of the uterus. The disappearance of these two suspicious affections, and their place being taken by others of a more distinctly nervous character, explained in some degree their nature. On one occasion we received her into the hospital in a state of great nervous excitement, caused by her being rudely laid hold of by a soldier in the street, as she was returning home late in the evening. We had often seen her in nearly as great a state of excitement before, and relieved her with camphor and fetid spirit of ammonia. However, her present attack proved less tractable than preceding ones, and a new feature soon exhibited itself. At a late hour of the night of her admission into hospital, she awoke, and attempted to speak to the patient that lay in the bed beside her, but to her utter dismay she found she could not articulate. When we saw her the next day, we found that she could not utter a word; she could only make signs. The tongue was firmly pressed against the roof of the mouth, and she gave us to understand by signs that she felt pain proceeding from the back of the head to the tongue, which we concluded to be in the course of the lingual nerve.

"Connecting this strange symptom with others that she presented at the same time, and regarding them all as nervous, we employed the usual medicines exhibited in aggravated hysteria, such as camphor, valerian, the valerianate of zinc, castor, &c., but without the least benefit to our patient. These means having completely failed, we now gave her mercury, and with six grains of calomel in divided doses, in two days, her mouth became very sore. Immediately her tongue was loosed and she could speak quite plainly; her sore mouth was the only

impediment to her distinct articulation. After the salivation, which was profuse, had ceased, we gave her tonics, and in a short time she left the hospital quite well, and soon went to service. The immediate recovery of speech on the mouth becoming sore was conclusive to us that the one was the effect of the other. But, it might be objected, is it safe to rest a conclusion upon a single case? might it not have been a *post hoc* rather than a *propter hoc?* We had the opportunity of answering such objection by evidence that could not be resisted, the subject of it being the same individual, who, while in service, had a return of her illness, with the same utter inability to pronounce an articulate sound. The family in whose service she was, and who knew nothing of her previous illness, sent her into another hospital, where she continued for seven months, unable to utter a word. During this time she underwent a great variety of treatment, but with no beneficial result. She at length left the hospital by stealth, and came into Sir Patrick's Dun's Hospital, under our care. She was affected exactly in the same way as she was when she was under my care before. I, of course, at once resorted to the mercury, and ordered for her five grains of hydragyrum cum cretâ thrice daily. On the third day her mouth had become sore, and on the same day her speech was restored.

"This case, not less remarkable for its twice exhibiting the unusual phenomenon of loss of speech than for the immediate disappearance of this phenomenon on the system becoming affected with mercury, and that, too, after the failure of all those remedies that are usually employed in what are designated nervous disorders, has led me to look for some positive and organic lesion as not unfrequently lying at the root of these so-called nervous diseases.

"Every practitioner who witnessed the cases of cerebro-spinal meningitis was struck with the similarity of symptoms exhibited between this affection and hysteria. And as in this latter affection the symptoms sometimes exhibit themselves

only in derangement of the functions of organs that derive their nerves from the ganglionic system, while at other times they exhibit themselves equally in disturbance of the cerebro-spinal system of nerves, so was it with cerebro-spinal meningitis the disease seemed equally to involve both the ganglionic and cerebro-spinal nerves.

"Of the cases that came under my notice, two exhibited as marked opisthotonos as in tetanus, while they also presented symptoms intimating disturbance of the ganglionic nervous system. Their symptoms were exceedingly like those of cholera, and the messenger who was sent to fetch me to see one of them told me he was taking me to a case of cholera, although the disease did not prevail at this time, nor had there been a single case of it in Dublin for years.

"Dr. Darby, of Bray, who was the first to notice cerebro-spinal meningitis in this country (for the disease was first observed in France, where it prevailed as an epidemic), seeing a disease more like cholera than any other disease he had before met with, at first thought it was cholera, until ulterior experience of it proved it to be different.

"The cases of fever which constitute the subjects of the foregoing observations, for the most part, came from the rural districts of Donnybrook and Castleknock, the Guardians of these districts having made arrangements with the Governors of Sir Patrick Dun's Hospital to receive them. From June 28, 1848, the wards were opened to receive these patients, and from this date to August 31st, 160 patients were received and treated, without a single death. In September, a most intractable dysentery exhibited itself, and proved fatal in many instances. It did not occur as a complication of the fever, but as pure dysentery. In all the fatal cases *post mortem* examination exhibited extensive ulceration and sloughing of the mucous membrane of the large intestines, and in parts large deposits of lymph on what to the superficial observer would seem to be the mucous membrane. But a careful exa-

mination satisfied us that wherever the lymph was to be found the subjacent mucous membrane had disappeared, and that the lymph was not the product of the mucous membrane, but of the submucous cellular tissue. We had already, from previous examinations of individuals who had died of fever complicated with follicular enteritis, learned to question what had been received as a pathological fact, that where lymph was found it was the inflamed mucous membrane retaining its integrity that threw it out. On removing the lymph in these cases, we always found that the membrane underneath exhibited none of the smooth villous appearance that naturally belongs to mucous membrane, but resembled a cellular or serous membrane; that it was in fact the cellular membrane brought into view from its investing mucous covering being destroyed. Finding this to be the case in fever complicated with enteritis, we naturally expected and found it to be the same in the case of pure dysentery. From this we doubt not that it is a pathological error to attribute the effusion of lymph in dysentery to the mucous membrane, and regard it as the product of the cellular membrane corresponding to the deposit.

"We conceive it also highly probable that this is the explanation of Hunter's experiment of causing the adhesion of the opposite surfaces of the vagina of the ass, by an injection of a strong solution of corrosive sublimate, an experiment so often referred to in proof that mucous membranes only require a certain degree of inflammation to cause them to throw out lymph, and then to adhere. We believe the strong injection destroyed the mucous membrane, and, inflaming the subjacent cellular membrane, made it throw out the lymph. Besides the plausibility of our explanation, we cannot suppose that mucous membranes, occupying the position that they do in the economy, namely, lining canals whose permanently open or patent state involves such serious consequences, should be susceptible of adhesion under almost any degree of inflammation. We should expect that they would die first, which we believe to be the

fact(*a*). Amongst the cases of dysentery was one occurring in a sailor, which presented a very unusual complication. He was labouring under the disease in a most aggravated form, when the wrists and knees became painful and swollen, and exhibited the suspicious aspect of purulent arthritis. The irritative fever under which he laboured at the time strengthened my suspicions as to the nature of the arthritic affection. The case, contrary to our expectations, terminated favourably. We treated it with calomel and opium, and blisters and stupes applied to the abdomen, and leeches to the verge of the anus(*b*), while tincture of iodine was applied to the inflamed joints. During the months of September and October, and to the 8th of November, we received into hospital 270 cases of fever, eight of which terminated fatally. The fever now assumed a worse type than it had hitherto presented. Amongst these fatal cases there were six males and but two females. The wards of the hospital, according to the arrangements to which we have above referred, were

(*a*) When I stated to Dr. Carte, Curator of the Museum of the College of Surgeons, my view both as to the lymph supposed to be deposited on inflamed mucous membrane, and also my explanation of Hunter's experiment, I was gratified to learn that this opinion on both these points was that held by the late Professor of Anatomy in the University, Dr. Macartney, whose pathological views were singularly exact, and, on many points, much in advance of the pathology of his day.

(*b*) The beneficial effects that we have seen experienced from leeches applied to the verge of the anus, both in acute inflammation and chronic congestion of the intestinal mucous membrane, induce us to press the point strongly on the attention of the physician. To no part externally can we apply leeches where they could possibly exert a more direct or immediate influence on unloading the congested vessels. And I am satisfied that were this locality oftener chosen where to apply leeches in hepatic affections, we should more rarely have dropsy or enlarged spleens as the result of such affections. Are we quite sure that nature does not, at least sometimes, establish hemorrhoids for the purpose of relieving the system? That she does make use of them when already existing, for this purpose, is beyond all question. Ought we not then take the hint from her, and let art adopt the suggestion of nature? Continental physicians know the value of this mode of applying leeches, and practise it most largely and beneficially.

opened on the 28th of June, and were closed, in consequence of the epidemic abating, on the 8th of the following November. During that time 336 fever patients were treated. Amongst these there were but eight deaths, an unusually small proportion of mortality; little more than two per cent. To what are we to attribute the small mortality? Is it to the mild character of the fever? While we do ascribe to the character of the fever a mortality small beyond all precedent, we conceive it would be to misrepresent it to call it a mild fever. The duration of a fever is, to a certain extent, a measure of its ordinary severity. The milder fevers in general run their course in a shorter time than those of a more severe type. Of these latter the fever seldom exceeds three weeks, unless it be kept up by some complication which prolongs its normal duration, and in general convalescence is complete in a month or five weeks. Applying this rule to the cases that we treated, we find that out of the 336 cases seventy-two remained in hospital more than thirty days; that eighty-two remained more than twenty days, and ninety-three more than ten days. According to this I conceive we can hardly call it a mild fever. To the peculiarity of its character, and to the simplicity of its treatment, we attribute its small mortality. The peculiarity to which we especially allude is the freedom from any complication of any organ or apparatus calculated to give it a dangerous character. As to the treatment, we never met with an epidemic where there was so little room for mistake. Stimulants alone were required, and were almost universally borne by the patients. They never seemed to be over stimulated. Of the 336 cases there were 148 females and 188 males.

"As to the contagious nature of the disease, we infer it from the fact that we have had in hospital, at the same time, entire families, embracing all ages.

"The striking peculiarities of this fever, as compared with preceding epidemics, seemed to us to consist in the complete absence of any complication except where the bastard rheumatism

indicated an affection of the spinal nerves, and which alone excited alarm when affecting the top of the spine and back of the head.

"Secondly,—In the extreme and overpowering sense of prostration of strength and depression of spirits, which imparted to it much of the character of aggravated influenza.

"Thirdly,—In exhibiting something like a crisis, but seldom complete, yet more of true crisis than the fever of recent date.

"Fourthly,—In the great tendency to relapse.

"Fifthly,—In the almost universal tolerance of stimulants.

"Sixthly,—In the absence of petechiæ.

"Seventhly,—In the absence of bed-sores.

"Eighthly,—In the tolerance of any amount of local bleeding, and the intolerance of the smallest amount of general bleeding.

"Ninthly,—In presenting some features of resemblance to ague by involving the spleen, and, like it, not affecting the sensorium."

[This Report upon the recent epidemic fever in Ireland having, in our last four Numbers, occupied so much of the space usually devoted to original communications in our Journal, that we have been obliged to exclude several valuable papers during the past year, we have determined to bring it to a conclusion in the present Number, and to print the General Summary in the separate publication of the Report, which will be published forthwith.—Ed.]

Art. VII.—*Contributions to the Pathology and Treatment of Eruptive Diseases of the Skin.* By J. Moore Neligan, M. D., M. R. I. A., Physician to Jervis-street Hospital, and Lecturer on the Practice of Medicine in the Dublin School of Medicine.

I purpose, in a series of short essays, to bring before the profession some facts regarding cutaneous diseases, which, in the course of my experience, have forced themselves on my attention; and, at the same time, to offer some observations that have been derived from their treatment, in both hospital and private practice.

Of the various affections of the skin, there are none which more obstinately resist remedial measures than the scaly eruptions. Constituted by Willan into a distinct order, and divided by him into four classes, lepra, psoriasis, pityriasis, and icthyosis, this arrangement has been generally adopted; and although the necessity or practical advantage of any subdivision of eruptions distinctly characterized by the peculiar epidermic secretion of scales may be doubted, I am very unwilling, as I have already stated in a previous communication in this Journal, to complicate the study of an already difficult subject in practical medicine, by any innovations on what may be termed established principles. Mr. Erasmus Wilson, in his beautiful pictorial work, and also in his volume on diseases of the skin, removes from Willan's order of squamous eruptions, pityriasis versicolor, and pityriasis nigra, adopting Rayer's nomenclature of chloasma and melasma, and regards them as *alterations* in the colour of the skin, accompanied by a foliaceous or mealy desquamation, and not by the separation of true scales. As, however, in both of these forms there is a squamous secretion, differing only in degree from the more distinctive separation of scales in the other classes of the order, and as there does not appear to be any essential difference in their treatment, I pre-

fer to regard them, with Willan, as varieties of pityriasis. Icthyosis must, I think, be removed from the order, for in it there is no separation—throwing off of the scales, or desquamation, which I look on as the most characteristic sign of this group of cutaneous eruptions; and I would furthermore simplify the classification, by reducing the classes to two, namely, psoriasis, under which appellation I would include the various genera of lepra, and pityriasis.

Probably the greatest difficulty in the study of cutaneous eruptions has arisen from the multiplicity of subdivisions into which they have been arranged by successive authors. Each writer endeavouring to improve on those that preceded him, instead of attempting to simplify the subject, and make his classification subservient, not alone to the diagnosis but to the treatment of these affections, by reducing the classes, orders, and genera, to as few a number as possible, has, in most instances, proposed either to alter completely existing classifications, and to substitute an altogether new nomenclature based on some theoretical notions of his own, or to make numerous additions to, and minute subdivisions of the arrangements of others. The student of these diseases is thus much perplexed, and too frequently abandons the subject in despair. In truth, the diagnosis of eruptions of the skin, so far as regards the distinction of one class, or of one order, from another, is simple enough, and it is only when we come to the definition of the genera, that much difficulty arises. What practical advantage, moreover, is to be gained by these minute subdivisions? The general principles of treatment adapted for the class are equally applicable to the genera; and I cannot admit the propriety of artificially classifying any set of diseases, solely with regard to their *appearances*.

Psoriasis, and its variety lepra, are so well described in all works on diseases of the skin, and their characteristic features are so defined, as not to require any further observations on their diagnosis.

The causation of these affections is, like that of all cutaneous eruptions, enveloped in much obscurity. That they are sometimes produced by the action of certain irritating matters on the skin cannot be doubted; yet we see the same local forms of psoriasis arise in persons who, from their occupation or position in life, are not exposed to the causes which produce it in bakers, washerwomen, shoemakers, and individuals of other trades. That they are sometimes hereditary is also true, but their hereditary nature is of a singular character; thus, so far as my own experience would lead me to infer, the disease does not descend directly from parent to child with the same regularity as other hereditary diseases, but the predisposition frequently appears to be derived from an uncle or aunt, whose own children may be free from the disease; and it also seems not uncommonly to lie dormant in a family for a generation, and again re-appear. In a case which I not long since attended, one son of a family was affected, from his childhood, with psoriasis of an inveterate form; none of his brothers or sisters had any cutaneous eruptions, nor had his parents or grand-parents, but a paternal uncle was affected with a similar disease, and also a first cousin, not the child of this uncle: it was also stated to me that a grand-uncle was a sufferer for years from a cutaneous eruption. A somewhat similar hereditary transmission of the disease has fallen under my notice in several instances, namely, that while the immediate descendants have escaped, one or more members of collateral branches have been affected. The true hereditary nature of psoriaris and lepra might, therefore, be doubted, and the cases which occur, and may be adduced as proofs of it, might be accounted for in the same manner as those in which no such origin can be traced, and which are usually stated to depend on some constitutional peculiarity, not better understood now than in the days of Willan, who described it as characterized by " a slow pulse, or a languid circulation of the blood, and, what must be generally connected with it, a harsh, dry, impermeable state of the skin and cuticle." The

latter part of this observation has been adopted by Mr. Erasmus Wilson, who says that "the disease appears for the most part in those who are remarkable for a dryness of the skin." Yet I cannot help thinking that this is a confounding of the effect with the cause, and that it would be rather hazardous to predicate the likelihood of psoriasis occurring in an individual because his skin was unusually dry or harsh.

Before I proceed to speak of the treatment of psoriasis and lepra, I wish especially to impress upon the profession the chronic character of all squamous eruptions; not that I consider the fact as already unknown or insufficiently known to all, even the youngest practitioner, but that I think it is too often overlooked in the prognosis given to patients or their friends as regards the curability of the disease, and especially as to the time required to effect a cure. Developed under the influence of a peculiar constitutional state of the skin, essentially of an obstinate character, and most apt to re-appear even in months or years after they seem to have been completely cured, length of time is as essential to their perfect removal as the most judiciously planned course of treatment. The physician should, therefore, in every case, be most careful not to promise a speedy cure, and always, before prescribing, explain to his patient the chronic character of the disease, and that it requires a steady perseverance in the use of remedial measures for at least two or three months before even an apparent amendment will be perceptible. The anxiety of mind which an individual labouring under a cutaneous eruption suffers is very great, and this too adds to the difficulty of treatment. The promise of an eventual cure, though after a lengthened period, tends to alleviate this anxiety, and prevents the repeated disappointment, changes of medical advisers, and trials of new plans of treatment, which the hope deferred, when a speedy cure has been promised, causes.

"It is an admitted fact," writes Cazenave, "that the therapeutics of these diseases rests upon purely empirical grounds,

and that, unhappily, there exists no sure guide to direct to a rational mode of cure." This statement, sufficiently true of most eruptions of the skin, is equally so of many other diseases of the body, and it should teach us not to despise the light thrown on pathology by the experience derived from therapeutics. When it is found that a certain class of remedies acts beneficially on deranged conditions of the animal economy, concerning the true nature of which doubt exists, it cannot be termed a *petitio principis* to infer that such derangements have a similarity in a greater or less degree to affections the nature of which is known, and which are benefited by the same class of remedies. In the treatment of scaly diseases of the skin I have found iodine, in some of its various combinations, especially useful; and I would, even from this therapeutic fact alone, be inclined to look upon the peculiarity of constitution in which they occur as nearly allied to the scrofulous; in fact, that their appearance is but one of the protean forms in which scrofula may be developed. And, independently of the beneficial effects of iodine, if we look to the remedies ordinarily proposed as specifics for their cure,—of course I speak only of those administered internally, or so to say, constitutionally,—what are they but tonics, alteratives, or diaphoretics, generally employed in the treatment of scrofulous affections? Again, if we lay aside the analogy derived from therapeutics, in how many points do not scrofula and scaly eruptions of the skin agree? —their hereditary nature, their slow development, the period of life at which they appear, their production by innutrition or mal-innervation of the system, their obstinacy, their liability to recur or be again reproduced, the diathesis of the individuals in whom they appear, &c.

In the treatment of psoriasis in any of its forms, amongst which I include the various genera of lepra, the internal remedies chiefly employed formerly were those which were known to act as diaphoretics; and which were given with the view of producing an alteration in the secreting apparatus of the skin.

This may be called a *rational* plan of treatment, it being applied to remove the condition on which the disease was supposed to depend, namely, defective cuticular secretion. But this class of medicines, although in most cases affording relief to symptoms, was not found to cure the disease; and, consequently, various remedies were used *empirically*, and the so-called specifics began to be employed. Of all these none appeared to effect a cure so frequently as arsenic, whether given alone, or its administration conjoined with the application of various local agents; and this medicine still holds its sway as the best specific for scaly eruptions, but it is now generally given in some combination with iodine.

The remedial efficacy of arsenic in these diseases I do not mean to dispute; indeed my experience would not permit me to do so: but I wish to show that in every case its beneficial action is more decided and more speedily manifested when the administration of iodine, or of the iodide of potassium, is employed at the same time, or alternated with it; and also that in those cases—and they are not a few—in which arsenic, no matter how prescribed, disagrees, the latter medicine alone is generally productive of the best effects. The same may be also stated of those cases in which, from any cause, the patient objects to take preparations of arsenic.

With the view of exhibiting the good effects of iodide of potassium combined with diaphoretics, I annex the particulars of one of the most inveterate cases of psoriasis that I have ever seen. I give the report of the case as described in a letter I recently received from the gentleman himself, a talented member of one of our learned professions. It presents a most graphic account of the disease.

"You wish for a detail of the disease for which you have so successfully treated me.

"Since my boyhood I have had patches of psoriasis on various parts of my body. They first appeared on the right leg, and soon after on the left. The treatment then employed

was some preparation of tar, in an ointment, applied to the parts affected, sarsaparilla, and some pills containing a small quantity of mercury. I did not persevere in the use of these remedies. The eruption was not painful or troublesome, and for several years I did nothing whatever in the way of cure.

"In the spring and autumn, it used to extend itself to the arms, the inside of the thighs, and about the hips, seeming to select the vicinity of joints. But at the other seasons of the year, it retreated to its old lodgment, the calves of the legs.

"About six years since it became extremely troublesome and painful. From having been indolent, it was inflamed and irritated, so much so as to produce sympathetic swellings in the groin. I then, under medical advice, applied poultices to lower the inflammation, and remove the scales; dressed the sores with a mild mercurial ointment, and as an internal remedy took some pills, of which Plummer's Pill was the chief ingredient. I persevered in this plan for about three months. It effaced the disease, but did not extirpate it, for the moment I discontinued the remedies, the ailment returned. After a while I tried liquor arsenicalis, but, thinking it a dangerous remedy, from its accumulative properties, I did not persevere long enough to judge fairly of its effects.

"In the autumn of 1848 the sores on the legs became very painful, so much so as to render walking inconvenient. I was advised to swathe the lower limbs in wet lint, kept moist by an oiled silk covering, and secured by a stocking bandage.

"From this mechanical treatment I derived great local relief. As a constitutional remedy I took liquor potassæ three times a day in a little milk, and paid some attention to diet.

"Unquestionably the system did me good, but I cannot say that the character of the sores changed much, and I soon abandoned it. It was, I think, in January last, that I consulted you.

"The limbs were inflamed, and the skin tense. In the neighbourhood of the affected parts there were small sinuses

in which matter was formed. The sores when touched bled freely, and they were very angry and ill-conditioned in their appearance. I persevered in your treatment for three months, and derived the greatest benefit from it. Under the influence of the tepid bath, and the alterative remedy prescribed by you, the disease has vanished from my body, save from the calves of the legs; but there the character of the affection has materially altered. Sound portions of skin have insulated themselves in the midst of what was a mass of leprous irritation, troublesome to myself, and unsightly in the extreme.

"I bandage the parts with old linen, take a warm bath at about 92° every week, and continue the use of your medicine. Mine is a very inveterate case, of more than twenty years' standing. I have tried several remedies, but the only two that were fairly persevered in are the mercurial and your's.

"I will not, therefore, comment on the others, as I cannot say what they might have done; but of the two above alluded to I prefer your's, because I think the effect more permanent, and purchased at a less risk.

"If mercury had driven the disease out of the constitution, I would have been cured, but it did not. Your plan of treatment, mild and simple, will always keep the disease down without the unpleasant necessity of having recourse to mercurials."

The plan of treatment which I prescribed for this gentleman consisted in the administration of five grains of iodide of potassium, dissolved in two ounces of a decoction of the *fresh* inner bark of the elm, taken every night at bed-time, and the employment of a fresh-water bath at the temperature of 92° F., at first three times, and afterwards twice weekly. In his case it is probable that the arsenical preparations might have acted equally beneficially, but he had an insuperable objection to take arsenic in any form; and from my previous experience of the good effects of the iodide of potassium in many cases where arsenic failed to cure the disease, I

confidently adopted its use, and the result has proved that I did not overrate it as a remedy for inveterate psoriasis.

Donovan's solution of the hydriodate of arsenic and mercury has been extensively employed in the treatment of this class of cutaneous eruptions, and the pages of the former series of this Journal bear ample testimony to its good effects. I must, however, confess that I am not partial to the employment of any mercurial preparation in their treatment, when they affect the body generally; and the only local form of scaly diseases, in which I have found a mercurial of use is in pityriasis of the scalp, as I mentioned in a former essay, and in it I still find the yellow iodide of mercury productive of the best results.

The iodide of arsenic has also been found a remedy of decided efficacy in the treatment of these affections; it was first generally employed for them by the late Dr. Anthony Todd Thomson, of London, and the testimony of those who have used it is confirmatory of his observations. My own experience leads me to place more reliance on it than on any other preparation of arsenic; but, although I have found it, when administered alone, capable of curing many case of psoriasis and lepra, I consider that its beneficial action is much augmented by combining it with the iodide of potassium, and with iodine in the form I shall hereafter describe. The following case is selected from many, as a proof of the effects of this remedy in producing a permanent cure. It was reported by Dr. T. W. Christie, now of Sidmouth.

Daniel Callaghan, nineteen years of age, a baker by trade, of middle stature and sanguine temperament, was admitted into Jervis-street Hospital, February 7, 1843, affected with psoriasis inveterata. The greater part of his body, and particularly his legs and arms, is covered with an eruption consisting, in some places, of small circular scales, and in others, of large irregular patches coated with white scales, and having an elevated border. There is an abundant desquamation of the cuticle, especially from the lower extremities. The scalp is also affected,

but the spots there seem to be more circumscribed. The tongue is rather clean; the bowels constipated; the appetite good, but he states that his strength is latterly much diminished.

From his own account, he was always healthy previously to his becoming a baker (about five years since); eighteen months subsequently to which period, having lived intemperately while exposed to the great alternations of temperature inseparable from his trade, his present disease made its appearance. It came on in the form of minute, red, elevated spots, about the size of a small pea, extremely itchy, and rendered more so by heat; they did not exude any moisture except when severely scratched; scales soon formed on them, which continually fell off, but to be renewed by others; and, rapidly spreading, they soon covered the whole of his body, except the face and hands, which have but partially suffered. He has been treated by various medical men during the last three years, but he has never received more than partial benefit from the many remedies tried with him. On admission he was ordered a warm bath and purgative medicine, and the next day a twelfth of a grain of the iodide of arsenic, made into a pill with liquorice powder, was prescribed for him, to be taken three times daily. This treatment was continued, the dose of the iodide of arsenic having been gradually increased to a sixth of a grain three times daily, until the 3rd of May, when he was discharged from hospital without a trace of the disease remaining. The medicine had occasionally to be omitted for a few days, when the system gave evidence of being saturated with it, and the symptoms then produced were readily removed by an active saline purgative, and the omission of the iodide, generally for two or three days.

This patient, during the entire time that he was in hospital, was kept *strictly on milk diet.*

This case is a good example of those in which the iodide of arsenic alone effects a rapid and permanent cure; but unfortunately, in most instances, it does not produce such decided

beneficial results; and when, after a fair trial of it, I find that the disease is not disappearing, I generally combine it with iodine and the iodide of potassium, or, omitting it altogether, give the latter medicine in the decoction of elm bark; and in very obstinate cases I administer them alternately, usually every second fortnight.

The importance of a milk diet I have insisted on in my "Essay on Eruptive Diseases of the Scalp," and experience leads me to the conclusion, that an adherence to it is of the utmost consequence in cutaneous eruptions, except when they occur in cachectic or broken down-constitutions, or are attended with deep ulceration, or very profuse and weakening discharges. It is, of course, much easier to carry out dietetic rules with hospital patients than with those in private or in dispensary practice, and consequently more satisfactory results are generally obtained in treating the former; but if the necessity for their observance be strictly inculcated, and if they are laid down in writing as constituting an essential part of the treatment, I have, in most cases, found them to be pretty closely observed. When, however, any serious objections are raised to the adoption of a strictly milk diet, farinaceous articles and milk should be made, as much as possible, a portion of the general food, and, in addition, fresh meat, plainly dressed, or poultry, should be alone allowed. The patient, or his friends, should, at the same time, be informed, that the cure will be more tedious, and relapse more likely to occur.

Tepid baths of *fresh* water, twice or three times weekly, will be found an adjunct of much importance in the treatment of scaly eruptions; they tend to restore the natural secretions of the skin, and prevent the accumulation of scales. They are especially useful when much local irritation exists, particularly in those cases where deep bleeding fissures are present. I have tried various other local applications, such as ointments or lotions of iodide of sulphur, of iodide of potassium, of sulphur, of sulphuret of potash, &c., but my experience leads me

to prefer the plain tepid bath. Alkaline baths of soda are not, I think, so applicable to psoriasis or lepra as to pityriasis.

Chronic cases of psoriasis are very frequently complicated with derangement of the digestive organs, evidenced by various dyspeptic symptoms; the most prominent of these are nausea and vomiting immediately after meals. This condition must be remedied by appropriate alterative and tonic treatment, previously to the employment of medicines with the view of acting directly on the eruption, for if arsenic or iodine, in any form, be given while this condition is present, they will tend to increase the existing irritation, and their expected beneficial action be thereby prevented.

I have already stated that I have derived excellent effects in the treatment of squamous eruptions from a combination of the iodide of potassium with arsenic and with iodine. Commencing the treatment, as I usually do, with the iodide of arsenic, where nothing forbids its use, after it has been continued for a month or six weeks, I order a mixture containing two drachms of the liquor arsenicalis, two drachms of simple syrup, five ounces and a half of distilled water, and half a drachm of iodide of potassium. Of this mixture, I prescribe, at first, a dessert-spoonful three times daily, in a glass of *eau sucrée*, directing it to be taken after meals. This quantity contains five drops of the arsenical solution, and a grain and a quarter of iodide of potassium. To it I sometimes, in very inveterate cases, or after it has been continued, in gradually increased doses, for some weeks, without decided effect being produced, add six grains of iodine,—a fourth of a grain to each dose. The mixture then, chemically speaking, is a solution of the ioduretted iodide of potassium and arsenic. When iodine is added in this proportion to the mixture, I use syrup undiluted as the menstruum, and then direct the dose to be taken in plain water. If a flavoured syrup be employed, the mixture is far from being disagreeable. After numerous trials made for me by Mr. Oldham, of Grafton-street, I find that

syrup of capillaire(*a*) most completely conceals the odour and taste of the iodine.

The only other preparations of arsenic that I have been in the habit of employing in the treatment of these eruptions, are the arseniate of ammonia and the arseniate of soda. Both are apt to disorder the stomach, the latter especially so; yet they are sometimes productive of good effects, particularly in the local forms of psoriasis, as in psoriasis palmaris. The arseniate of ammonia I always use first, and generally alternate with it the arseniate of soda. They are best given in solution. The formula I prescribe is somewhat similar to that proposed by Biett, consisting of one grain and a half of the arseniate of ammonia dissolved in three ounces of water, to which are added six drachms of spirit of cinnamon, or of compound spirit of aniseed. The dose of this mixture is one drachm, which contains a twentieth of a grain of the arseniate, and it is gradually increased to two or three drachms three times daily, beyond which dose I do not find it safe or useful to venture. It is best taken in a little plain water, and either during or after meals.

In addition to the use of internal remedies, I always employ external applications in the treatment of psoriasis palmaris, and of the other local forms of the eruption. Iodide of sulphur, in the form of ointment, I have found productive of the best effects, but it must be used very much diluted in the first instance, and the strength of the ointment gradually increased. Not more than eight grains to the ounce of wax

(*a*) This syrup is much too little used in medicine as a flavouring ingredient; its odour and taste are peculiarly agreeable, very much more so than those of most of the syrups contained in our national Pharmacopœias. It is officinal in the French Codex; and, singularly enough, the variety of capillaire, the Adiantum pedatum, from which it is chiefly prepared, is a native of Canada, from whence it is imported into France: there can, therefore, be no commercial reason why it should not be in general use with us. I hope that the framers of the new edition of the Dublin Pharmacopœia now in preparation will introduce it amongst the officinal syrups.

cerate should be prescribed in the commencement of the treatment, and the proportion should never be greater than twenty grains to the ounce. The parts affected should be washed, at least three times daily, with a weak solution of the carbonate of soda, half a drachm to the pint of distilled water, and well dried afterwards, previous to the renewed application of the ointment.

As regards *pityriasis*, when it affects the body generally I treat it, if of short standing, as a mildly inflammatory affection, prescribing gentle saline purgatives twice or three times a week; an alkaline bath,—four ounces of carbonate of soda in sufficient fresh water for an ordinary bath, at the temperature of 80° to 92° F. according to the season of the year,—every second day, and in strong constitutions an occasional bleeding, either general or by the application of half a dozen leeches to the verge of the anus. But when the disease becomes chronic, I use the same treatment as I have above described for psoriasis: it must be remembered that the alkaline bath is not so useful in the chronic as in the acute stage of the affection. The local forms of the disease are, I think, best treated on the plan I have proposed for the eruption when it affects the scalp. The chief additional observation my subsequent experience enables me to offer on the local disease is, that it is of a much more inflammatory character in persons from the age of 12 to 35 than in the very young or the old, and consequently that the use of the mildest local stimulant in them will often cause a marked aggravation of the symptoms, and is therefore scarcely, if at all, admissible in its treatment.

I have found pityriasis a more obstinate eruption to treat than psoriasis, not that the effects of remedies are less marked in causing its disappearance, but it is much more apt to return even in months after an apparent cure has been effected. Whatever plan of treatment, therefore, I find successful in removing the disease in any individual case, I direct to be continued for at least a month or six weeks after the scaly secretion has

ceased, and in every case the use of fresh water tepid baths should be directed twice or three times weekly for several months afterwards.

In the commencement of this paper, I have given my reasons for not agreeing with Mr. Wilson in removing pityriasis versicolor and pityriasis nigra from amongst the squamous eruptions of the skin, and classifying them with those affections characterized by lesion of colouring matter. They are, so far as my experience enables me to judge, amenable to the same remedial measures as the other forms of pityriasis, and the plan of treatment adopted by Mr. Wilson, in the case reported in his beautiful folio work, does not differ in principle from that which he uses in squamous eruptions. I believe pityriasis versicolor to be but a variety of pityriasis rubra; the latter occurring usually on those parts exposed to the action of the air, as on the face, neck, and hands, being especially well marked on the fingers; while the former, to quote the words of Willan, "chiefly affects the arms, breast, and abdomen."

In concluding, for the present, I have to add but one or two words with respect to the clothing which ought to be worn by persons suffering from, or who have been affected with any scaly disease of the skin. Every observer of these affections has remarked their liability to re-appear, or be aggravated, in autumn and in spring. This teaches the necessity of avoiding sudden changes of temperature, and of keeping the surface of the body of as uniform a warmth as possible. Linen or woollen garments should not be worn next the skin, as they are apt to irritate. The under-clothing should be either of silk or cotton, the former I prefer; as, however, its price places it out of the reach of the poorer classes, the latter must be used by them; but the necessity of wearing a silk or cotton inside vest, with sleeves, must be impressed on all.

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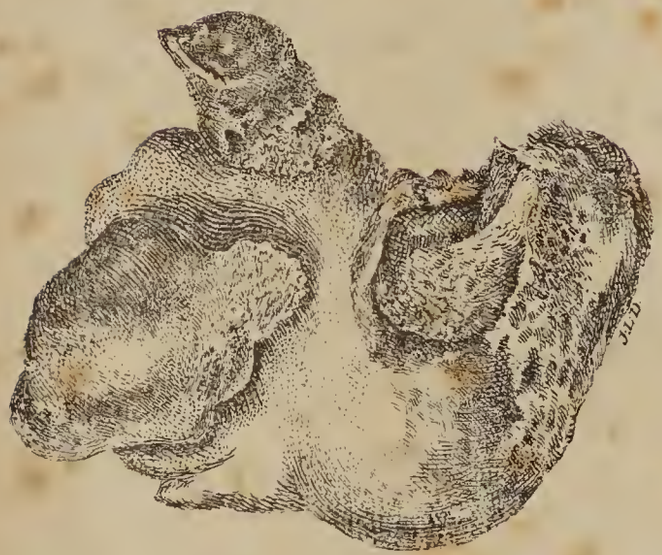

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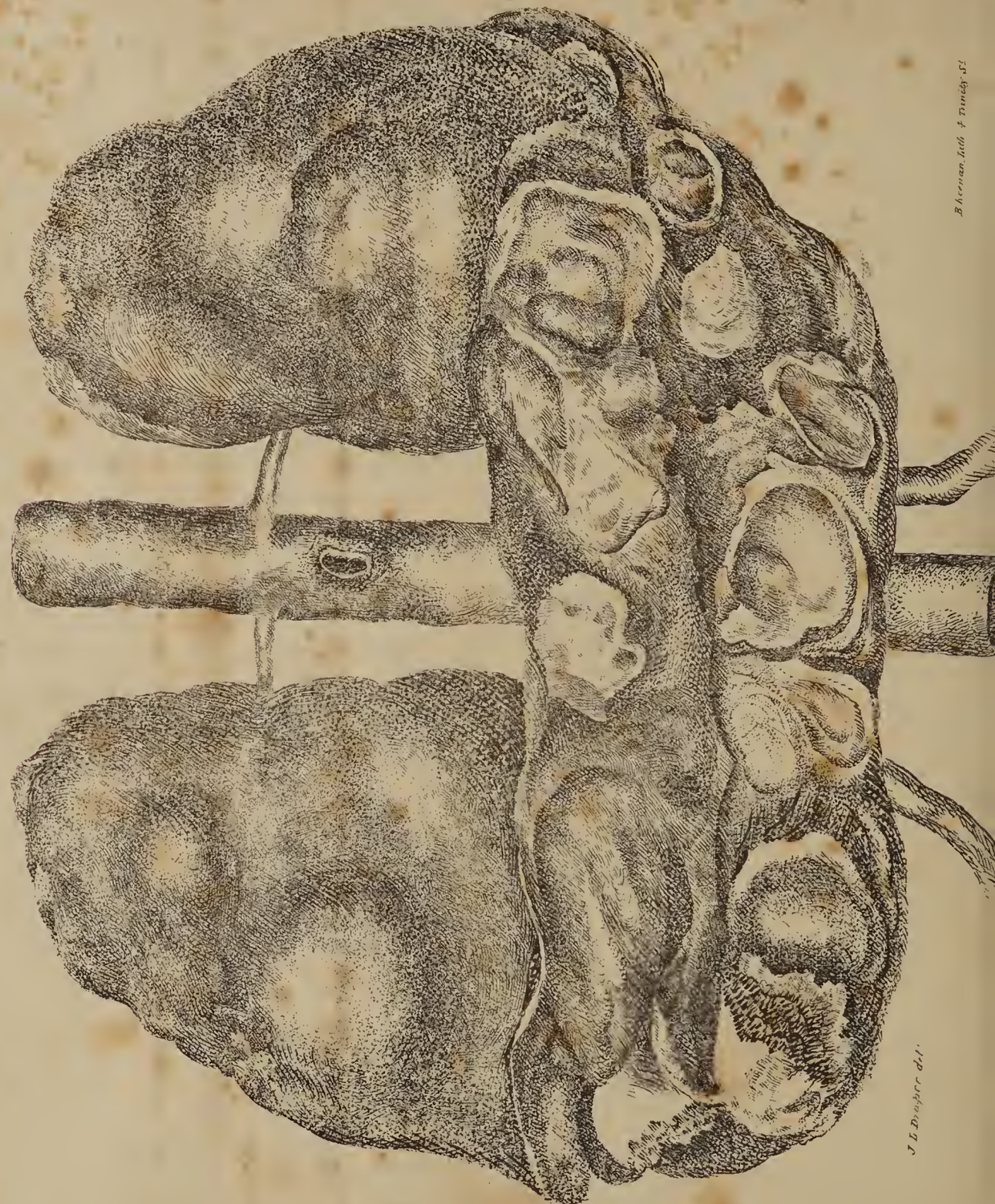

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Art. VIII.—*Cases of Calculi in the Kidneys, with Observations.* By Cathcart Lees, M. B., Physician to the Meath Hospital. With a Plate.

Although the present advanced state of pathology and chemistry has thrown much light on all the diseases of the kidneys, yet the practitioner must confess that he often feels embarrassed when called upon to decide as to the exact nature and cause of some of the frequent, though often obscure and painful symptoms, referred to these organs. It is, for instance, difficult to pronounce whether a patient's sufferings are caused by mere functional derangement, or are owing to some acute or subacute inflammatory attack of the substance or lining membrane of the kidney, requiring antiphlogistic treatment, but not likely to return if properly treated; or whether they are caused by the presence of a calculus in the kidney, or some degeneration of its substance malignant or otherwise, when the treatment must be chiefly palliative, and our prognosis, to say the least, very guarded as to the probable return and final result of such attacks. I therefore think it may be interesting to the profession, to give the details of two cases of calculi in the kidneys, where the symptoms were accurately observed by me during life, and the diagnosis confirmed by *post mortem* examination.

J. B——, aged 20, apprentice to a watchmaker, a strong lad, but of a sallow, unhealthy appearance, had been under my care occasionally for about two years, suffering from frequent desire to pass urine, with pain in the loins, particularly in the right side, sensation of nausea, and general uneasiness, but never so as to incapacitate him from attending to his business. The urine was always passed pale, turbid, and alkaline, a thick ropy mucus coming with the first gush; specific gravity 1·006; albuminous, and contained very little urea. The quantity of urine was scanty, but the deposit of ropy mucus very considerable. He was examined by Sir Philip Crampton and Mr. Read, who pro-

nounced that there was no disease of the bladder; the diagnosis was chronic suppuration of the kidney, with probably granular degeneration. His father told me that the lad had passed a small stone when he was about ten years old, but had the ropy mucus in the urine from infancy; and the same appearance had also been present in his mother's urine. He was relieved by treatment, but suffered from repeated returns of the complaint, till at last, after exposure to cold, he was attacked with severe pain across the loins, sickness of stomach, and great debility. I found him suffering from pyrosis, diarrhœa, dry parched tongue, constant nausea (no dysuria); pulse 100, very feeble and intermitting; countenance expressive of great suffering; the urine was pale, scanty, highly alkaline when passed; a copious deposit of ropy mucus, with a slight reddish tinge; there was great tenderness on pressure along both ureters. A consultation was held with Mr. Smyly, when we agreed that his sufferings were probably caused by a calculus impacted in the ureter. Two days afterwards, the abdomen being much retracted, I detected a hard tumour a little above the level of the umbilicus in the *right lumbar region*, anteriorly. The tumour was hard, tender, and could be moved laterally; he suffered constantly from severe nausea and retching, like the worst form of sea-sickness, and died suddenly, while being turned in bed; but, strange to say, he had not been confined to bed till within four or five days of his death.

The body was examined by Mr. Williams. Though it appeared greatly emaciated, there was a considerable amount of fat in the integuments of the abdomen. On putting aside the omentum and intestines, the tumour came into view, covered with fat, and lying close along the spine; it proved to be the right kidney, which was brought forward out of its proper place, and joined to the left kidney across the vertebral column, forming what is termed a horse-shoe kidney, the substance of one being continued into that of the other by a transverse portion passing across the spine. Both the sides and the trans-

verse portion were filled with calculi. The pelvis of the right kidney was filled by a large calculus, which extended into the calices, forming branches, and which constituted the tumour felt during life; but both kidneys were quite filled with calculi of various sizes. The tubular structure of the kidneys was nearly obliterated, and the cortical substance much congested; the ureters were pervious, and slightly dilated; the bladder was of the natural size; no thickening of its walls, nor any columnar fibres, which was satisfactory in confirming the opinion as to the healthy state of that viscus, which had been previously given. It presented, however, a curious appearance, the mucous membrane being covered over with numerous vesicles, which contained a gelatinous fluid. The other viscera of the abdomen appeared healthy, as also the viscera of the thorax. The calculi, when removed from the kidney, presented, over the most of their surface, a rough, white, granular appearance, covered here and there with patches of a dark brown colour, composed of oxalate of lime; the chief bulk of the calculi was, however, composed of triple phosphate with phosphate of lime; of these the latter was by much the more abundant, as was proved by dissolving out the triple phosphate by acetic acid, and by the calculus fusing only slowly and partially before the blowpipe. The phosphate of lime, almost all of which resisted the action of the acetic acid, was instantly and completely dissolved on the addition of dilute muriatic acid. One of the largest calculi weighed 1120 grains, and is represented in the plate. I made sections of some of the calculi, but the composition was the same all through. He had never passed any sand in his urine, in which, when examined with the microscope, minute *acicular* prisms of the triple phosphate only were observed.

William Clarke, a car-driver, was admitted into the Meath Hospital for bronchitis. On going round the wards I observed this man vomiting, and on inquiring as to the cause, he said he vomited constantly, and attributed it to his cough. On investigating his case I found that he suffered from constant

dull pain in the right lumbar region, with severe pains in his feet, and vomited every morning, but passed urine without any annoyance. He stated, however, that he was formerly a soldier, and that in Africa, twenty years ago, he contracted fever, and at that period suffered from some urinary affection, having occasional retention, with severe pain in the loins and region of the bladder. He was discharged and gradually recovering, continued in good health till about six years since, when he was attacked with severe pain in the lumbar and pubic regions, accompanied by obstinate vomiting, which persisted for three days, when, after violent straining, he passed a small stone by the urethra. The urgent symptoms immediately subsided, and he continued free from suffering till about three months since, when the symptoms of which he now complains made their appearance. The urine was now found to be large in quantity, of a pale opaline colour, alkaline immediately after being passed, spec. gravity 1·007, albuminous; a copious deposit of white sediment subsides to the bottom of the vessel, while an iridescent pellicle floats on the surface; on submitting the urine to microscopic examination, large triangular prisms of the triple phosphate were seen, with amorphous phosphate of lime. I made the diagnosis of a calculus in the right kidney, and put him on a generous diet, with dilute nitric acid, and mild counter-irritation to the right lumbar region, under which treatment he was progressing favourably, when unfortunately he was attacked with erysipelas of the face and fauces, which terminated in death. Both kidneys presented evidences of considerable congestion; in the right one, firmly imbedded in its substance, there was a calculus the size of a lozenge, elongated, curved at its extremity, and the whole cortical substance of the organ appeared to be undergoing the process of granular degeneration. The mucous membrane lining the pelvis of the kidney and commencement of the ureter was of a dull white colour, and slightly thickened.

These cases present many points of interest, some common

to both, others peculiar to each. The appearance of both these patients was strikingly characteristic of what Dr. Prout has termed the phosphatic diathesis; they were both unhealthy-looking, as if labouring under some form of cachexia. The temper of the last patient, Clarke, was peculiarly fretful, irritable, and morose; the nurse, and even the patients, complained that nothing would please him; he was always grumbling. The most constant complaint in both cases was of pain in the back, and this is a symptom well worth investigating; as Sir Benjamin Brodie truly observes, "there is nothing in practice which you will be so often consulted about as pain in the loins." The gouty debauchee, the married female, the hysterical girl, the athletic man, the victim of lumbago, all complain loudly of pain in the back, although there may not be the slightest organic change in the kidneys. Again, pain in the back is a prominent symptom in aneurism of the abdominal aorta, also in rheumatic inflammation of the intervertebral cartilages and vertebræ; and such is the difficulty, in some cases, of forming a correct diagnosis, that Sir B. Brodie with great candour mentions a case which he and Dr. Prout diagnosed and treated as calculus, which ultimately proved to be caries of the vertebræ; so that we should be slow in concluding that there is disease of the kidney because there is constant pain of the back, unless we have other symptoms to guide us, as in these cases, where we had a very important additional symptom, viz., nausea and vomiting, particularly well marked in Clarke's case, and which was caused, I feel confident, by the mechanical irritation of the tubular structure of the kidney by the phosphatic crystals; and in this irritation the stomach participated, through the influence of the splanchnic nerves, from which both the renal and gastric plexuses are derived. This symptom is also of great use in aiding us to distinguish the symptoms and signs caused by the presence of a calculus from the effects of a simple chronic nephritis. Here also there is languor, a cachectic appearance, pain in the loins; the

urine pale-coloured, alkaline, phosphatic, occasionally albuminous, but without vomiting, so that the mere secretion of alkaline urine is not sufficient to cause vomiting. It is of great importance in all these cases to ascertain whether the urine is secreted alkaline, or whether it has become so in consequence of chemical changes taking place in it after its secretion. This distinction has been particularly insisted on by Rayer, who considers that urine which is secreted alkaline is an important indication of simple chronic nephritis, and particularly so as there is often no other very obvious sign of the disease. The inflammation runs a very insidious course; they complain of some languor, look out of health, may or may not have some aching about the loins. The bronchitis which Clarke complained of on admission I regard also as another of those sympathetic irritations, intimately connected with the morbid state of the nervous system; for there was no proportion between the apparent suffering caused by the bronchitis and the physical signs on auscultation, the former being excessive, the latter trivial; nor did the symptoms yield to the usual treatment with the facility we would expect in a case of simple bronchitis.

The physical and chemical characters of the urine were highly important as in both cases, it was very pale in colour, alkaline, albuminous, and loaded with phosphates, affording a good example of the co-existence of those deranged actions by the influence of which the phosphates are deposited and albumen appears as a morbid product in the urinary secretion, and exhibits one of the numerous complications which may accompany albuminous action. This coincidence involved some nicety in the examination of the urine; for as the fluid was alkaline, it was not coagulated by heat, which merely rendered it turbid by causing a deposition of the phosphates, so that I had first to dissolve them in acetic acid, which has no effect on albumen, and then I coagulated the albumen with dilute nitric acid, thus proving the existence of both abnormal elements in the urine. Another important feature in the urine, was the

nature of the deposit; in the first case it consisted of a dense, ropy mucus, as was proved by Mr. Moore, to whose valuable assistance in the chemical and microscopic examination of urine, on this as well as on other occasions, I feel much indebted, who found the addition of acetic acid to corrugate it, and form a peculiar brainlike substance. This ropy mucus always came out with the first gush of urine. Now these points are of importance to bear in mind, as it is laid down in many books as a means of diagnosis between disease of the kidney and that of the bladder, "that in chronic inflammation of the pelvis, and calices of the kidneys, there is dysuria, with a deposit of true pus which flows *after* the urine; while, in catarrh of the bladder, the deposit is glairy and viscous, consisting of ropy mucus," but in this case the deposit was ascertained (by Mr. Moore) to be mucus, not pus, and the chief part of it came out before the gush of urine, as I had frequently asked the patient about it, and he told me it always preceded it: but we should bear in mind, that a glairy appearance may be caused in renal pus by the presence of a certain amount of alkali in the urine; and I believe, as a general rule, whether pus or mucus comes from the kidneys, ureter, or bladder, it is always passed mixed with it, though in greater quantity, towards the end of the emission. The urine in the second case, that of Clarke, was also peculiar in depositing a copious sediment, though of a very different nature, as in his urine there was no mucus, but a copious deposit of earthy and alkaline phosphates, forming a thick stratum like white gravel at the bottom of the vessel. Now this is a rare circumstance when the urine is pale, abundant, and of low specific gravity, for though this condition of the urine is generally considered to be characteristic of what is termed the phosphatic diathesis, and to consist in an excess of phosphates, yet it really is not the case. This has been satisfactorily proved by the experiments of Dr. Aldridge, detailed in the "Dublin Journal of Medical Science" for March, 1843. He states "that in place of being increased, the quantity of phosphates in the urine is

actually generally diminished in the so-called phosphatic diathesis;" and Rayer, in his valuable work on diseases of the kidney, dwells particularly on this state of the urine, as strongly indicative of a chronic inflammation, or a subacute nephritis; in fact, the term "phosphatic diathesis" does not necessarily imply any actual excess of phosphates in the urine, while it recognises their appearance as a deposit, determined by a deficiency of acid, or by alkalescence of that fluid. Earthy phosphates are very insoluble in alkaline fluids, and very soluble in dilute acids, so that the slightest trace will be made visible if the urine becomes alkaline, and a great excess will be concealed if the urine is normally acid; so that, as has been well proved by Dr. Bence Jones, their non-appearance does not argue their absence, nor their appearance their presence in excess. In fact, though variations in the acidity and alkalescence of the urine are common, yet an excess of the phosphates is very rare. It may appear strange that some of the symptoms generally considered pathognomonic of calculi in the kidneys were absent, such as pain shooting down the course of the ureters, retraction of the testes, bloody urine; but I presume that the calculus not having entered the ureter sufficiently accounts for the absence of pain in this direction, and the nature of the calculi being phosphatic and free from asperities accounts for the absence of hæmaturia. It is indeed surprising to what a size phosphatic calculi may form in the kidney without the occurrence of hæmorrhage, or even any serious symptomatic irritation, as long as they remain confined to the gland. If they are too large to pass into the ureter, they generally cause some disturbance, but not at all proportionate to their size, as, their increase being generally very slow, the organs gradually become accustomed to the stimulus, and accommodate themselves to the pressure, till the organization and consequently the functions of the kidney are destroyed; but if the calculus be dislodged or fractured, as in the case of a fall, or strain of the lumbar muscles, they are attacked with severe

pain in the back; vomiting, often inflammation of the kidneys, and suppression of urine, followed by coma and death, or suppuration of the kidney may take place; or they may escape with merely an attack of violent pain, as occurred in a case which Dr. Edwards Crisp has given me the particulars of. A gentleman, sixty years of age, when jumping over a flower bed in his garden, was seized with a sudden and violent pain in his right loin, which continued for several hours, but gradually subsided. He died about twelve months after, of disease of his heart, and in the pelvis of the right kidney a large calculus was found, which was fractured in the middle. The malformation of the kidneys in the first case, with their anomalous position lying across the vertebræ, ought not to be considered as a mere anatomical curiosity, for it might occasion a serious error in diagnosis, either by causing the displaced kidney to be mistaken for some morbid tumour in the abdomen, or might divert our attention from the true source of the disease, in cases where the symptoms should lead us to suspect a disease of the kidneys; thus Rayer, in his valuable work(*a*), gives the partilars of a case of inflamed horse-shoe kidney, which lay across the spine. The patient complained of severe pain in the umbilical region, but none in the lumbar; the disease of the kidney was not suspected, though the urine was purulent. In my case the malformation proved of assistance in making the diagnosis, as, from the kidneys being brought forward in front of the spine, I was thus enabled to detect the calculus. *I am not aware of any other case in which a calculus has been detected by feeling it through the abdominal parietes anteriorly.*

As for the treatment in these cases, acids appear to be chiefly indicated,—rather as general tonics in improving digestion, than with the hope of rendering the urine acid,—together with good animal diet, cider, and Rhenish wines. I generally prefer the dilute nitric acid, as it agrees well with the stomach. When the secretion

(*a*) *Maladies des Reins*, vol. i. p. 406.

of ropy mucus, or muco-purulent deposit, is very great, I have found benefit from the balsam of Tolu, alternately with preparations of Buchu. Pareira brava, bark in effervescence, turpentine, cubebs, copaiba, are recommended, but great caution should be observed in their use, lest they induce severe inflammatory action, for though the secretion of mucus or muco-pus may be diminished by their use, yet the paroxysms of pain are often increased. Opium, camphor, and hyoscyamus, are valuable auxiliaries, with mild counter-irritation, and belladonna to the loins. Our treatment should be palliative and preventive; and I cannot conclude this paper better than by referring to the latest opinion(*a*) of Rayer on this subject, though I think he overrates the frequency of inflammation of the kidneys as the cause of alkaline urine, and undervalues the use of acids.

Unless the examiner is well versed in the microscopic investigation of urine, he will sometimes find it difficult to form a correct diagnosis, particularly in the case of phosphates, for when they occur as minute acicular prisms, they are often crystallized like uric acid on one of the fine transparent hairs which are found in urine, and the irritation and excitement of a calculus often causes the urine to be loaded with lithate of ammonia; but the history of the case, the absence of bloody urine, and the invariably colourless crystals of the phosphatic magnesian salt, will be sufficient to prevent his making an error.

The illustration represents the kidneys of the full size, with the aorta in the centre, giving off the renal arteries. A section is made of the transverse portion, showing the substance of the kidney continued across the spine, sacculated and filled with calculi, while the ureters are represented in their natural situation, contrary to what usually occurs. The calculus, figured the natural size, was impacted in the pelvis of the right kidney, and had three large branches projecting into the calices.

(*a*) See Ranking's Retrospect, vol. ix. p. 73.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Physiological, Anatomical, and Pathological Researches. By John Reid, M. D., Chandos Professor of Anatomy and Medicine in the University of St. Andrews, &c. &c. Edinburgh. 8vo. pp. 659.

Hand-Book of Physiology. By William Senhouse Kirkes, M. D., assisted by James Paget, Lecturer on General Anatomy and Physiology at St. Bartholomew's Hospital. London. 12mo. pp. 705.

In a simply critical capacity we have but little to do with Dr. Reid's work, inasmuch as its major portion is already well known to every one conversant with the elements of physiology. The researches of this most distinguished experimentalist are part and parcel of the science he has illustrated. Criticism has long stamped them with her highest approbation, and placed them in the very foremost rank of British contributions to anatomico-physiological science. In collecting, then, his various papers, and publishing them in a separate form, the late Dr. Reid has not only done justice to his own well-won fame, but rendered an inestimable benefit to the numerous students of his works, among whom we must rank ourselves. Until the appearance of this volume, it may be safely asserted, that none but professed physiologists were aware of the number and importance of Dr. Reid's contributions to medical science, while those who were acquainted with their existence found such difficulty in consulting them, from their being scattered through so many journals, that it is probable no modern medical writer was so often spoken of and quoted, and at the same time so little read, as the author of these researches.

This volume is an *actual* republication. With mere verbal alterations, the papers are printed just as when they were

originally brought before the world. We expected no less from a man of Dr. Reid's honesty, though the neglect of this has been sufficiently common in medical literature, and has been the fruitful source of various and lengthened disputes, injurious alike to the profession and to science, about the paternity of certain discoveries. But in thus presenting to his readers the account of his researches, as originally promulgated by him, Dr. Reid has not neglected the more recent contributions to his science, a slight *resumè* of which, and of their relations to his own investigations, has been appended to the various papers. These, though not full, will be found of great use to the student who for the first time peruses Dr. Reid's Essays. We can imagine the proud satisfaction of our author in the reflection, that almost every investigation, since the period of his own researches, has not alone confirmed their accuracy, but derived support from their steady light.

The first Essay, on the "Relation between Muscular Contractility and the Nervous System," contains, perhaps, the most perfect demonstration that has ever been offered of the truth of the Hallerian doctrine of the "vis insita." Probably no point in physiology has been more contested in late days than the problem whether contractility is a property of muscular fibre, or of the nerves which supply the muscle. Very recently(*a*) the whole subject of the relation of spinal paralysis to muscular contractions has been brought before the profession by Drs. Todd and Marshall Hall, and it is impossible to doubt that the result of their somewhat warm discussion has been decidedly to confirm the experiments and inferences of Dr. Reid, as given in the Essay(*b*) before us. In reference to the experiments and reasonings of those who have contended that the *nerves* supply the contractile power to muscles, and that section or ligature of a nerve produces paralysis in the muscles to which it is distributed, Dr. Reid makes the following remark, which, indeed, may be termed the *proposition* of the Essay:

"To those arguments it may be replied, in general terms, that all that can be meant by the term paralysis, in the cases referred to, is, that the muscles have ceased to act in obedience to the mental act of volition; for, if mechanical excitation be applied to the nerve, below the point where it has been cut across, or included in the ligature, within a certain period of time after the muscles have been thus rendered quiescent, equally active and durable contractions can be produced in the muscles said to be paralysed, as in other muscles

(*a*) Medico-Chirurgical Transactions, vols. xxx. and xxxi.
(*b*) The date of the original essay is 1840.

whose nervous connexion with the central organs of the nervous system has been left untouched; and that the subsequent disappearance of the contractility in muscles thus insulated from the central organs of the nervous system is due to the imperfect nutrition that follows a state of inaction, in whatever organ of the body this may be induced."—p. 4.

Of the first part of this proposition Dr. Reid gives sufficiently ample proof. He removed a portion of the large nerve of one limb of a frog, and simply exposed the corresponding nerve of the opposite limb. The muscles of both were then galvanized until they had ceased to contract, and it was ascertained that the contractility returned as quickly and as strongly in the one limb as in the other, though in one of these the muscles had been insulated from all connexion with the nervous centre; the property of contractility, therefore, argues the author, cannot be derived from the central organs of the nervous system. Dr. M. Hall has objected to these experiments, that the division of the nerve may have acted *as a shock* upon the muscles to which it is distributed, and that the re-appearance of the muscular contraction after a few days may be due to the passing off of the effects of the shock,—a view which is altogether disproved by Dr. Reid's subsequent experiments, in which he exhausted the contractility four different times, and yet each time it returned, though the trunk of the nerve had not been disturbed after the first part of the experiment, when a portion of it was removed. In reference to the latter part of the proposition, Dr. Reid alludes to Müller's well-known experiments, and forcibly objects that this author has not taken into consideration the remarkable effects of inaction upon the structure of muscular fibre, a circumstance which, indeed, altogether vitiates the conclusions of that physiologist. Microscopic examination has proved decisively that long inaction, even when the communication of the nervous centres with the muscle is entire, produces the most remarkable alteration in the minute structure of muscular fibre. Dr. Reid removed a portion of the sciatic nerve in a rabbit; seven weeks afterwards the animal was killed, and the muscles of both posterior extremities were exposed, and irritated by the direct application of the wires of a galvanic battery to the muscles. The muscles of the paralysed leg contracted very feebly, while those of the other leg were thrown into powerful contraction. "The muscles of the paralysed member were evidently much smaller, paler, and softer than the corresponding muscles of the opposite leg." The muscles of the two legs were weighed respectively; those of the sound leg weighed 327 grains, while those

of the paralysed limb weighed only 170 grains. We are further told that, under the microscope, "the muscular fibres of the paralysed leg appeared considerably smaller, had a somewhat shrivelled appearance, and the longitudinal and transverse striæ were much less distinct than in the muscles of the sound leg."—p. 10. To decide whether or not this imperfect nutrition depended upon any supposed nervous influence flowing along the nerves to the muscles, and not merely upon inaction, the spinal nerves in four frogs, as they lie in the lower part of the spinal canal, were cut across, and both posterior extremities were thus insulated from their nervous connexions with the spinal cord. The muscles of one of the paralysed limbs were exercised daily by a weak galvanic battery, while the muscles of the other limb were allowed to remain quiescent; at the end of two months the muscles of the exercised limb retained their original size and firmness, and contracted vigorously, while those of the other limb had shrunk to one-half of their former bulk. In a note appended to this essay Dr. Reid mentions some of the more recent investigations into this subject; all of which go to prove the correctness of his own views. We may here refer especially to the observation of Mr. Bowman, who has seen contractions in separate fasciculi of muscles under the microscope, after their complete isolation from the nervous and vascular tissues. Our author remarks in conclusion upon the important application of some of these experiments to the treatment of disease. Not the least interesting feature in Dr. Reid's writings is the constant reference to practice; in his hands truly physiology is made what she ever ought to be, the handmaid of the medical art. Practical men are now quite agreed upon the importance of keeping up the proper nutrition of the muscles, while the motive power is in abeyance, knowing well by experience, that the restoration of this latter is not necessarily followed by the disappearance of the paralysis, except this condition has been maintained, either by the efforts of art, or, as in some cases, by the morbid processes themselves.

The second essay is of still greater importance, and is, perhaps, one of the ablest of Dr. Reid's contributions to physiological science. It is "On the Order of Succession in which the vital Actions are arrested in Asphyxia." In spite of the numerous investigations into this point since the time of Bichat, it must be allowed that a great deal yet remained to be done, and that what we did know was scarcely established upon a firm basis. It would be difficult to imagine a man more fitted to guide us in this most complex investigation than the author of these

researches. Independently altogether of his abstract merits as an experimentalist and medical reasoner, the minute attention which he has given to the anatomy and physiology of the principal organs concerned(*a*) gives us the greatest confidence in his observations upon the subject of asphyxia.

The essay is principally directed to the solution of the two following points: the nature of the impediment to the circulation of the blood through the lungs, and the cause of the arrestment of the sensorial functions. The impediment to the free passage of the blood through the vessels of the lungs, and its consequent stagnation in the right side of the heart, have been attributed to three causes, "the cessation of the mechanical movements of the chest, the effects of the venous blood upon the contractility of the heart, and the difficulty of transmitting the venous blood through the capillaries of the lungs, when the chemical changes which go on there between the blood and the atmospheric air have ceased." Haller held the opinion that the stoppage of the mechanical movements of the chest was the cause of the phenomena stated; a view which is now altogether abandoned. Goodwyn's argument, that the circulation through the lungs continues when an amount of fluid is contained in the chest sufficient to compress the lungs to the extent which occurs in expiration, is almost decisive against Haller's doctrine. But Professor Alison's experiment leaves no room for doubt. He confined a rabbit in nitrogen gas, until its respiratory movements became laboured and insensibility was approaching. The animal was then withdrawn from the glass jar, the brain was crushed by a blow with a hammer, and the chest was immediately laid open. The quantity of blood in the right side of the heart preponderated considerably over that in the left. Here the respiratory movements had not been interrupted until the animal had been deprived of life, and the circulation in a great measure stopped, and yet we find the same phenomena which have been attributed to their suspension. We can hardly avoid Dr. Reid's conclusion, "that the accumulation of blood in and around the right side of the heart is dependent upon the cessation of the chemical changes between the blood and atmospheric air in the lungs, and not upon the arrestment of the mechanical movements of the chest."

But this is still further proved by the admirable experiments of Dr. Reid himself, who adopted the following procedure. A tube with a stop-cock was fixed into an opening in the trachea of a

(*a*) See the articles "Heat" and "Respiration" in the Cyclopædia of Anatomy and Physiology.

rabbit, and one of Poiseuille's hæmadynamometers were introduced into the femoral artery, for the purpose, we are told, of obtaining definite information upon the force with which the blood was transmitted along the arterial system. The stop-cock was then shut, and when the respiratory process had been suspended sufficiently long to cause a decided fall in the column of mercury supported by the blood of the femoral artery, a bladder full of pure nitrogen was fixed in the tube of the trachea. The mercury continued to fall in the instrument, descending two inches in one minute after the adjustment of the nitrogen bladder to the trachea, as we learn by the table with which Dr. Reid has furnished us. A bladder of the same size, but filled with atmospheric air, was now put into connexion with the trachea, the mercury rose very rapidly *immediately* after the atmospheric air had entered the lungs, and acted upon the blood, and stood five inches higher than when the animal was breathing nitrogen. This experiment was repeatedly performed with the same results. Here, too, the respiratory movements continued during the breathing of the nitrogen gas, but they failed to renew the free circulation of the blood, while the breathing of atmospheric air was instantly followed by an increase of pressure upon the arterial coats. Dr. Reid's observation upon the *rapidity* of the rise of the mercury after the animal was allowed to breathe atmospheric air is of great importance.

Since the date of this paper, Mr. Erichsen has published some inquiries upon the phenomena of asphyxia, in which he has advocated the theory that the arrestment of the circulation through the lungs is owing to the circumstance that the venous blood acts as an excitant upon the contractility of the ultimate ramifications of the pulmonary veins, and this causes an obstruction to its progress. But Dr. Reid objects that the *simple contractility* of arteries manifests itself by slow contractions, followed by equally slow relaxations: "If then the minute radicles of the pulmonary veins be stimulated to contraction by the venous blood, relaxation ought not to follow instantly upon the withdrawal of this excitant; and the entrance of pure atmospheric air into the lungs ought not to be instantly followed by the free passage of the blood from the right to the left side of the heart," which we have seen to be the case. Reference is also made by the author to an experiment of Bichat, one which he has frequently repeated, in which the trachea was obstructed, until a current of dark blood feebly circulated in the arteries, when a large artery was opened, and instantly, upon the admission of atmospheric

air, blood of a bright red colour sprang from the divided artery, and with greatly increased force.

It was in the experiments first alluded to that Dr. Reid made the unexpected observation which is now incorporated as an important fact with general physiology, that when the blood had become dark in the arteries, and the animal functions had been suspended, the mercury actually stood higher in the instrument, and the large arteries, became more tense for about two minutes after the animal had become insensible than before the stop-cock in the trachea was shut, and while the animal was breathing atmospheric air freely. This, which was so little to be anticipated from *à priori* reasoning, Dr. Reid observed so uniformly in his numerous experiments, that it became necessary to set about an explanation of the phenomenon. There seemed but one mode of accounting for this appearance, namely, that the same impediment which existed to the circulation in the pulmonic capillaries existed also in the systemic capillaries, and that, therefore, the force of the left ventricle was principally concentrated on the arterial system. This surmise was proved to be correct by placing a hæmadynamometer in the vein of the opposite limb, when the remarkable difference between the height of the mercury in the two instruments gave the clearest proof of the existence of obstruction in the systemic capillaries. So far from being *exceptional*, therefore, this phenomenon offers additional proof of the accuracy of Dr. Reid's main doctrine, that the interruption of the due relation, *quoad* nutrition, between the solids and fluids, lies at the very basis of the pathology of asphyxia. We must refer also to another striking observation made during these experiments. When the animal made an attempt at expiration, and commenced to struggle, the mercury rose from half an inch to nine inches, and in one experiment to ten inches; while, on the other hand, during each attempt at inspiration, and during quiescence, the mercury descended to the same extent, "making a most material disproportion in the extent of the pressure upon the inner surface of the arterial system of vessels."

The opinion that the heart's action ceases because it cannot be excited to contract by venous blood is now known to be erroneous. Dr. Reid's own experiments are conclusive as to this point. Bichat found that in an asphyxiated animal dark blood at first traverses the lungs to reach the left side of the heart, and may be projected, for a short time, with considerable force, from a cut artery; and that, even when the heart has ceased to beat, it may be re-excited to contract by the injection of venous blood along one of the pulmonary veins

towards the left side of the heart. It is scarcely necessary to remind our readers that Bichat's opinion as to the cause of the accumulation of the blood in the right side of the heart was, that it was owing to the circulation of dark blood in the bronchial arteries, the cessation of the excitation of the lungs by atmospheric air, and the enfeeblement of the heart by the circulation of venous blood in its muscular tissue; aided by the circumstance that the systemic ventricle more easily overcomes the resistance offered by the systemic capillaries than the veins and pulmonic ventricle can overcome that arising from the capillaries of the lungs. We consider this latter a much more important element in the production of the phenomena of asphyxia than is generally imagined. We find that it is only after an interval of several minutes that there is evidence of increased arterial pressure, from the cessation of the vital actions ever going on in the healthy condition, between the capillaries and the tissues; the same state, it must be remembered, which exists in the lungs from the absence of oxygen. But it is quite certain that this condition has *begun to arise* considerably before this period. We think an experiment devised by Dr. Reid for a very different purpose gives considerable strength to this surmise. A stop-cock was put in the trachea as before, and the femoral artery was then laid bare. The pulse now ranged from 105 to 120 in a minute, and the respirations were very short and rapid. At the end of the first half minute after the stop-cock was turned, the pulse was 92. At one minute and a half the pulse was about 120, the animal had commenced to struggle, and the blood in the artery was decidedly dark. At the second minute the blood was nearly as dark as in the accompanying vein, but the struggles of the animal rendered it impossible to count the pulse. At the end of two minutes and a half the animal had ceased to struggle, was evidently insensible, and the pulse was 42. In a second experiment the pulse rose thirty-four beats at the end of one minute after the stop-cock was closed, and when *the blood had become decidedly darker.* On referring to Table I. we find that in *one* minute after the stop-cock was turned, " the artery becoming a little dark," the hæmadynamometer ranged between 3·0 and 7·0 inches, it having stood at 5·5 the instant the stop-cock was turned. At the termination of another half-minute it ranged from 3·0 to 9·0; at the end of two minutes it stood at 12·0. We have seen that the general result of the experiments on the pulse first named was, that it is at its highest range at about one minute from the commencement of the experiment. The left ventricle was obviously struggling to its utmost to

overcome the obstruction commencing to exist in the systemic capillaries, and was successful ; but as the process of asphyxia went on it ceased to be competent to overcome the accumulating difficulties of its position; the pulsation diminished in frequency, and the hæmadynamometer showed the extraordinary arterial pressure we have alluded to.

These experiments offer a very exact similarity to certain morbid processes. In some cases of pulmonary emphysema with intense bronchitis, the pulse is quick at first, and during this period the cerebral functions are well performed; but towards the termination of the disease, the pulse often becomes slow, and concurrent with this are first observed stupor, delirium, and sometimes, as we have recently seen, convulsions. There can be no doubt, whatever may be the opinion held upon this particular point, that Bichat had clearer idéas upon the nature of asphyxia than any author who preceded him, and than many who have followed him. That he had not distinct notions concerning the minute changes in the capillary system is true, but this is a knowledge which has resulted from very recent investigations. To Graves, Alison, and Draper, among many others, we owe our enlightenment on this abstruse subject. Indeed we have always considered the clear views we now have of the functions of nutrition and secretion, as compared with those of our ancestors, among the best and most stable consequences of modern physiological research.

The cause of the arrestment of the sensorial functions in asphyxia has given rise to almost equal discussion. Bichat held that the circulation of venous blood in the arteries of the brain was the cause of this phenomena. Dr. Kay believed they were owing principally to a diminished supply of blood to the cerebrum. Dr. Reid argues in favour of Bichat's doctrine, but asserts that the effects of the circulation of venous blood in the brain are not owing to any noxious influence of that blood upon the nutrition of the organ, but to its not possessing the power of *exciting the brain to action*, a matter of which Bichat spoke doubtfully. Our author has very properly separated the *sensorial* functions from those of the medulla oblongata in these experiments,—the former, being suspended before the latter, as evinced by the respiratory efforts, are modified to a very great degree; and he expresses himself as satisfied "that the function of respiration is much enfeebled at a period of the process of asphyxia when this cannot be explained by any diminution in the quantity of blood sent to the medulla oblongata." He adduces in support of his own views, and against Dr. Kay's doctrine,

the experiments on the pulse in different stages of asphyxia to which we have already referred.

We must confess that our leaning is towards a middle view between those of Bichat and Kay. Dr. Reid himself does not appear to us to have come to an absolute conclusion on this point, for while he holds that the arrestment of the sensorial functions does not depend upon any diminished transmission of blood through the vessels of the brain, he admits that the pulse has become less frequent about the time that the insensibility has supervened. Subsequently he states "that it is quite possible that the ultimate cessation of the functions of the medulla oblongata *may be hastened* by the diminished quantity of blood sent along the arteries supplying it."—p. 36. We hardly think Dr. Reid is fully aware of the remarkable effect of slowness of the pulse upon the cerebral functions. Apoplectic attacks have been recorded(*a*) as of frequent occurrence in persons in whom this peculiarity existed. In poisoning by digitalis, while the pulse is perhaps beating at 40 in the minute, we observe giddiness, stupor, convulsions, coma, and death. In narcotic poisoning, in general, we believe slowness of the pulse to be the immediate precursor of death(*b*). Our conviction is, that in these cases, as well as in the experiments before us, the functions of the encephalon are partially suspended by the circulation of venous blood, while their complete cessation is produced by a diminished supply. It is highly probable that the former stands to the latter as cause to effect; that the cerebral functions, impaired by venous blood at first, so re-act upon the heart as to produce at least diminution of supply, and therefore entire suspension; and this is, in spite of his objections to Dr. Kay's experiments, pretty nearly Dr. Reid's own opinion. We shall now quote his *resumè* of this subject, with which we shall conclude our remarks upon this Essay, recommending it strongly to the perusal of our readers:

"Dark blood is at first transmitted freely through the lungs, and reaches the left side of the heart, by which it is driven through all the textures of the body. As the blood becomes more venous, its circulation through the vessels of the brain deranges the sensorial functions, and rapidly suspends them, so that the individual becomes unconscious of all external impressions. The functions of the medulla oblongata are enfeebled about the same period that

(*a*) See Dublin Hospital Reports.

(*b*) We were lately struck by the fact in a case of poisoning by cyanide of potassium.

the sensorial functions are arrested, but are not fairly suspended for some time longer. Immediately after the sensorial functions are suspended, and the blood has become still more venous, it is transmitted with difficulty through the capillaries of the lungs, and consequently begins to collect in the right side of the heart. A smaller quantity of blood must now necessarily reach the left side of the heart; and this diminution of the quantity of blood sent along the arteries, conjoined with its venous character, and the ultimate arrestment of the circulation, being circumstances incompatible with the manifestation of vitality in the other tissues of the body, general death is sooner or later induced."—p. 38.

The third paper in the volume before us, "On the Effect of Venesection in renewing and increasing the Heart's Action," though short, abounds in matter for reflection. The experimental results of Dr. Reid perfectly coincide with our own ideas, drawn from the observation of disease. The remarkable effect of small, well-timed (chiefly local) blood-letting, in certain conditions of embarrassed circulation complicated with pulmonary mischief, though by no means recognised by the profession at large, seems to us to support very strongly the speculative inferences of Dr. Reid. Our knowledge of the true pathology and diagnosis of these disorders has probably rather retarded our treatment of them. Those who are sceptical upon this point we should recommend to peruse the cases of authors twenty or thirty years ago, when the diagnosis of these diseases was imperfect, and when blood-letting was not uncommonly practised as a part of the treatment. We have seen comfort obtained, and even sometimes death manifestly kept at bay for a long period, by a timely cupping between the scapulæ, an infinitely safer proceeding than the long-continued use of digitalis, now so fatally common.

"Two rabbits were killed by a blow on the head sufficient to injure a portion of the brain. On exposing the heart, its movements were feeble and the right side of the heart was engaged. The escape of blood from the external jugular vein was followed by a decided increase in the number and strength of its contractions, which lasted for a considerable time."—p. 54.

The same result was observed in many other experiments. Dr. Reid observed that the effect of artificial inflation of the lungs in renewing the circulation, though sufficient if commenced when the contractions of the heart are still going on vigorously, are materially assisted, when these are less active, by disgorging the right side of the heart. He believes that bleeding from the external jugular vein, in cases of asphyxia, is principally efficacious by its power of renewing the heart's

action, and with this view recommends that the blood should be allowed to flow from the lower orifice, "and from that orifice alone," if we are anxious not to draw much blood. He gives us the proviso that "no air should be allowed to pass into the vein," but the obvious difficulty in attaining this object strikes us as being a practical objection to this procedure.

Of the next two papers, "On the Functions of the eighth Pair of Nerves," being by far the longest and most important in the work, we feel it to be unnecessary to say anything. On them will be mainly founded Dr. Reid's fame as a physiologist. When we consider the difficulty of his subject, the contending opinions and experiments of previous investigators, the vast interest attached to an exact knowledge of the functions in question, it is scarcely possible to over-estimate the debt we are under to the man who, by a most searching, patient, and profound experimental analysis, has scarcely left room for doubt upon the many subjects he has taken the pains to investigate. That these researches are eminently practical we need only refer to his experiments upon the effects of section of the vagus upon the lungs, and of the inferior laryngeal nerves upon the glottis; that we are not setting too high a value upon these researches, we must ask our readers to refer to the writings of any recent physiological author for ample proof. We think the profession is indebted to Dr. Carpenter for his early appreciation and well-expressed confidence in these experiments(*a*). Dr. Kirkes, the "Handbook of Physiology," which we have placed at the head of this article, has also drawn largely from this rich mine. As the former has long been the students' text-book, and as the latter bids fair to possess a similar place in their library, we repeat our unwillingness to bring before our readers what must be well known already to the least learned among them.

To these follow short papers "On the Effects of Lesion of the Trunk of the ganglionic System of Nerves in the Neck, upon the Eye-ball and its Appendages," and "On some Points in the Anatomy of the Medulla Oblongata." In this latter Dr. Reid has insisted upon the motor character of the olivary body, and has traced with his usual care and accuracy the attachments of the motor, encephalic, and spinal nerves to this column, and to its upward prolongation into the encephalic mass. The following essay, being No. VIII., "On the Anatomical Relations of the Blood-vessels of the Mother to those of the Fœtus in the human species," is also one of Dr. Reid's best known contributions to Science. The view he has here advo-

(*a*) Human hysiology, first edition.

cated of the relation of the fœtal villi to the vascular system of the mother is the received opinion in this country at present. His main proposition is, that the placental tufts project to a varied extent into the utero-placental veins; the inner surface of the vascular system of the mother being everywhere reflected upon the outer surface of these tufts. He speaks of this coat of the maternal vascular system forming "a large sac, which is intersected in many thousand different directions by the placental tufts." Some diagrammatic sketches are given of the minute anatomy of this part of the subject, which will be found copied in Dr. Kirkes' Handbook, who has for the most part followed our author. Both these writers have referred to Mr. Goodsir's admirable observations upon the minute structure of the fœtal villi, which we may consider the crowning illustration of the cell-theory in general, and of the ingenious germinal-centre theory of that anatomist in particular. Dr. Kirkes has given these views in a very succinct and clear manner:

"It would seem that at the villi of the placental tufts, where the fœtal and maternal portions of the placenta are brought into close relation with each other, the blood in the vessels of the mother is separated from that in the vessels of the fœtus by the intervention of the distinct sets of nucleated cells. One of these belongs to the maternal portion of the placenta, is placed between the membrane of the villus and that of the vascular system of the mother, and is probably designed to separate from the blood of the parent the materials destined for the blood of the fœtus; the other belongs to the fœtal portion of the placenta, is situated between the membranes of the villus and the loop of vessels contained within, and probably serves for the absorption of the material secreted by the other set of cells, and for its conveyance into the blood-vessels of the fœtus. Between the two sets of cells, with their investing membrane, there exists a space, into which it is probable that the materials secreted by the one set of cells of the villus are poured, in order that they may be absorbed by the other set, and thus conveyed into the fœtal vessels."—p. 643.

The next paper, "On Injections of the Vessels of the Fœtus," we shall pass over with the remark that Dr. Reid has, by his well-contrived injections, shown to a demonstration that the Eustachian valve actually possesses the power now generally ascribed to it,—but upon which some still affect to throw a doubt,—of effectually preventing the mixture of the two currents of blood from the cavæ in the right auricle of the fœtus.

Passing over a comparatively unimportant paper, "On sensational and emotional reflex Actions," we arrive at No. XI.,

"On some Points in the Anatomy and Physiology of the Heart," and No. XII., "On the Measurements of the Heart." The former of these papers is an abstract of certain portions of the author's well-known article, "Heart," in the Cyclopædia of Anatomy and Physiology. The description there given of the precise attachment of the great vessels to the tendinous rings, and of the exact figure of these rings themselves, is now the "staple" of all demonstrators of these portions of the heart. Under the section, "Mode of Action of the Valves of the Heart," Dr. Reid states his conviction, that the opinions that the mitral and tricuspid valves are passively floated up towards and obstruct the auriculo-ventricular orifices, so as to prevent the free regurgitation of the blood into the auricles, and that the use of the chordæ tendineæ is merely to limit the movements of the valves, are erroneous; and, *per contra*, maintains with Bouillaud that these cords are the proper tendons of the musculi papillares, by whose contraction the valves are approximated. For proof he refers to the very uniform position and course of the musculi papillares and chordæ tendineæ, more particularly those of the left ventricle, that the chordæ tendineæ pass from each musculus papillaris to both lips of the mitral valve, occasionally crossing each other; "and that the posterior or smaller lip, though it may be drawn inwards so as to meet the larger and more moveable, is so bound down as to be scarcely capable in most cases of being floated up on a level with the orifice; and further, that the musculi papillares contract at the same time with the other fibres of the heart." Both Haller and Dr. Reid have proved this last statement by actual experiment. Our author professes his adhesion to the opinion that the impulse of the heart against the parietes of the chest occurs at its systole, and rejects altogether the various explanations that have been given of the particular mode in which the apex is made to impinge against the thoracic wall. To Senac's idea that this was principally brought about by the attempt of the two great vessels to *straighten* themselves, and thus the apex, describing the arc of a circle greater than the other parts of the heart, comes in contact with the side, he opposes the observation of Drs. Corrigan and Shebeare, "that the direction of the curvature of the large arteries is such, that if any effect of this kind is produced, the heart would not be carried to the left side, but in the direction of the curve, which is exactly in the opposite direction."—p. 368. Dr. Reid believes that the true explanation must be drawn from the course of the muscular fibres. We have not space to insert his minute description of these fibres, which is given in full in the excellent article just re-

ferred to; but we may briefly state that the explanation is based upon the facts, that a large number of fibres pass from the posterior portion of the septum in a spiral manner towards the apices of the ventricles, and are finally inserted, some into the tendinous rings, while others form part of the columnæ carneæ. In this arrangement the tendinous rings are obviously the fixed points, and as some of the fibres are only connected to the tendinous rings through the lax chordæ tendineæ and valves, it must follow that the force with which the contraction takes place towards the septal extremity must preponderate over the other; this being the case, "the apex must be carried forwards at the same time that it is drawn upwards towards the base."

The next brief paper, "On the Measurements of the Heart," well merits attention from those who are in the habit of recording cases. We have long been convinced of the necessity of giving something like precision to reports of certain altered conditions of the cardiac orifices, by proper measurements. At present it is impossible to rely upon the observations of any but professed pathologists of acknowledged experience, who, by habit, have obtained a certain standard of what is and what is not abnormal. But we need scarcely observe that the vast bulk of recorded cases are given by men who make, probably, but two or three *post mortem* examinations in the year. There cannot be a shadow of doubt that men fancy orifices dilated or contracted, just in proportion as the one or other view favours the explanation of the symptoms during the life of the patient; or as one or the other view vindicates the diagnosis of the observer, who is acting quite honestly, perhaps, but so wedded to the rules of dogmatic diagnosis, under which, unfortunately, this branch of medicine is suffering very heavily, that he imagines he sees all he ought to see. Careful measurement would remedy all this, and would, we firmly believe, effect considerable changes in heart-pathology as at present taught. Dr. Reid's mode, and which we can recommend to our readers from our own experience, is to cut through the auriculo-ventricular and arterial orifices, and measure the distances between the cut ends of the tendinous rings which surround these orifices.

Many interesting papers follow upon which we cannot dwell, but we feel called upon to draw the attention of the reader to No. XIX., being a "Report on the Epidemic Fever of Edinburgh." The account has been constructed from cases which occurred from the end of October, 1838, to the middle of June, 1839. The analysis of the symptoms in nearly 200 cases is given by Professor Henderson, whose departure from the walk of regular medicine we cannot help deeply deploring.

Of this analysis, excellent though it be, we have scarcely anything to say. The reports of the distinguished physicians in this country, who have successively recorded their experience of this deeply interesting disease, as is shown by the Report on the late epidemic, concluded in our present Number, leave nothing to desire on this point. We look upon the reports alluded to as perfect models of what mere observation can effect. But we presume no candid man has a doubt that, in spite of their vast opportunities, the Irish practitioners have not given us very extensive data towards the foundation of a knowledge of the pathology of the disease; indeed how could they, with the difficulties thrown in their way for making *post mortem* examinations? Here Dr. Reid comes to our assistance, and in the conclusion of this Report, and more particularly in the one following, "On the Pathology of the Edinburgh continued Fever," gives us a careful and valuable summary of the morbid appearances in a considerable number of cases. Of course we cannot pretend to give a detail of the numerous observations here brought forward, but there are two series of morbid appearances described, upon which we must make some brief remarks. The first of these consists of the description of the morbid state of the brain and its membranes. We are told that the brain was examined in forty-three out of the forty-seven cases which form the basis of Dr. Reid's summary. Of these forty-three cases increased effusion of serum within the cranium was observed in twenty-five. The most common seat of this effusion was under the arachnoid. In five out of the twenty-five the quantity of serum effused was sufficient to elevate the arachnoid above the surface of the convolutions only at the most depending parts. In other five the effusion of serum under the arachnoid was slight, but it existed in other portions of the brain. In fourteen cases the quantity of serum effused was sufficient to elevate the arachnoid above the convolutions, not only at the posterior or depending parts of the surface of the brain, but also over the middle parts. Out of the fourteen cases last referred to, the lateral ventricles contained an increased effusion of serum in five; in one case amounting to ten drachms. Now in the five cases first mentioned, the following were the symptoms during life. One is stated to have been *confused;* another was restless, and had a convulsive fit; another had stupor, became comatose, and continued so till the time of his death; a fourth had headach on admission, with muscular tremors. In the next five cases we find one is stated to have been restless and delirious the third evening preceding his death, and on the morning of that event

to have had subsultus tendinum and muscular twitches; in another, in whom the lateral ventricles were slightly, though evidently distended, without any increased effusion under the arachnoid, the patient is said to have been violently delirious, requiring coercion, the night previous to his death. In another of the five cases headach was complained of, and the pupils were contracted two days before death. Among the next fourteen cases we see recorded in almost all some well-marked "head symptoms," as stupor, coma, tremors, subsultus tendinum, contracted pupils, restlessness, &c. But in "the other cases in which increased effusion of serum was found within the cranium, they appear to have had only the confusion of thought so commonly observed in fever; and it is of importance to remark, that in one of those cases, in which one ounce of serum was effused into the lateral ventricles, and the arachnoid elevated above the surface of the convolutions at the posterior and middle parts of the brain, the disease ran its course without any marked local symptom."—p. 458.

To discover the relation which these symptoms bear to the morbid appearances we must pursue the inquiry as Dr. Reid has done, namely, investigate the symptoms in the eighteen cases in which no increased effusion of serum was found within the cranium. The first case, which occurred in a woman, exhibited "furious delirium" on the second night previous to death. In a second the patient was unable to give any account of himself on admission; the eyes were suffused, the pupils were contracted, and he had slight subsultus; he remained insensible, and died on the third day after admission. In another case the patient the evening before death had a convulsive fit, with movements of arms and lower extremities, and distortion of features, which lasted for about ten minutes; she had two similar attacks within four hours: she became insensible after the first convulsive attack, and died next morning. In the last-mentioned case, being the fourteenth in which cerebral symptoms were well developed, the patient was delirious, and attempted to escape out of a window two nights before death. It is impossible to gainsay the inference of Dr. Reid from these cases, that they afford no distinct evidence that the serous effusion was in all cases, if in any, the cause of death. This last consideration is again dwelt upon in the Report following, and the relation of the effusion of serum upon the brain to the morbid conditions of the lungs is carefully analysed; all which, though deeply interesting, we can do no more than commend to the notice of the inquirer.

The second series contains the result of the examination of

the abdominal organs. These were examined in forty-one cases out of forty-seven. The mesenteric glands were distinctly enlarged in two cases only. In two cases only were the elliptical patches of Peyer very distinctly elevated, and presented any appearance of ulceration. One of these cases had left the county of Sligo only ten days before. Of the residence of the second nothing is stated. It is remarkable that, while lesion of the intestinal canal was so rare in Edinburgh, it *prevailed* in the fever raging, at the same period, at Anstruther in Fifeshire, an account of which is given, drawn from information furnished by that accomplished anatomist, Mr. John Goodsir. In all the *post mortem* examinations obtained, which amounted to ten, Peyer's patches and the solitary glands at the lower part of the ileum were elevated and ulcerated. In the next Report Dr. Reid states, that in six only of the ninety-one cases which form the basis of the Report were the elliptical patches elevated and ulcerated, and in five of these the solitary glands were in the same condition. These six cases are divided into two classes,—into those in which the ulceration begins on the inner surface and gradually extends downwards, the interior of the enlarged patches containing no lardaceous-looking deposit; and into those in which the ulceration commences by the detachment of sloughs formed in the interior of the enlarged glands, from the breaking up of a lardaceous-looking deposit. This last division corresponds with the appearances considered characteristic of the typhoid fever of Paris. Taking together the forty-one cases of the previous Report and the ninety-one of the present, we find that, in the whole 132 cases, ulceration of the elliptical patches or solitary glands was found in eight; but in five only do the appearances exactly coincide with the description given of the typhoid fever of Paris. In two of the others the patients were not resident in Edinburgh before the commencement of their illness, in fact were Irish labourers in search of work. Dr. Reid remarks:

"During the whole three years and a half that I conducted the *post mortem* examinations in the Edinburgh Infirmary, in no single case did I observe, in any individual who had been seized with fever while residing in Edinburgh, anything resembling the changes described as occurring in the lower part of the ileum in the typhoid fever of Paris."—p. 501.

Why the typhoid form of fever should for several years past never be found in Edinburgh, while it existed at Linlithgow, Anstruther, and other places in Fifeshire, is truly worthy of investigation, as suggested in the Report before us. In the

appendix it is mentioned that in the winter of 1846–7 cases of typhoid fever became frequent; and Dr. Bennett, the successor of Dr. Reid as pathologist to the Royal Infirmary, examined during this period upwards of twenty fatal cases of fever, in which the follicular lesion of the intestines was more or less marked. These remarkable observations only still further obscure our knowledge of the intimate nature of fever, but meanwhile they must be noted for future investigators.

Several interesting papers follow, among which we would particularly point out a review of Wattman's Treatise on the entrance of air into the veins, which contains a short but clear account of almost all we know on this subject. But we must now conclude our very imperfect analysis by enjoining all who really love their profession as a science, or who wish to gain information on some of the arcana of physiology, to procure and study this most admirable work—the labours of one only lately snatched from among us, but who, by this, probably the most valuable contribution to medical science the British school has for many years given to the world, has left behind him an undying name.

On the Handbook of Dr. Kirkes we shall make but few observations, firstly, because, in its very nature, it hardly bears a regular analysis, and secondly because we had lately occasion, in discussing Dr. Carpenter's Treatise, to bring before our readers some of the more prominent and interesting facts of recent physiological research. The present work of Dr. Kirkes is a most worthy preparatory book to the larger and more comprehensive treatises of Wagner and Müller, to which we may add the giant Cyclopædia of Anatomy. In compiling his Handbook Dr. Kirkes has had the valuable assistance of Mr. Paget, which circumstance not a little enhances its value. The arrangement differs from most preceding treatises; yet we cannot but state our firm opinion that Dr. Kirkes has in this matter followed the most natural course, and one which is practically found to be most convenient for the student, for whom this book is principally intended. The first two chapters are on the chemical and structural composition of the human body, which are followed by an account, in distinct chapters, of the several organic functions, including absorption, nutrition, and secretion. It is not till the fifteenth chapter that we find the account of the nervous system and of the functions of relation. The concluding chapter is on "generation and development." Notwithstanding the opinions and practice of certain authors, we think it would be hard to prove that the most natural way of teaching physiology is to commence with

the description of the highest animal functions, to thoroughly understand which requires that the reader should be habituated to physiological reasoning. We believe our author has wisely judged the contrary is the best method, which commences with an account of those functions which, as well as being the most *general*, are also the most easily analysed and made the subject of generalization. The chapters on the blood and the circulation have struck us as being particularly full and excellent. The section on "the vital properties and actions of the blood" contains an abstract of Mr. Paget's Lectures of last year on the life of the blood, which deserve great praise. The following is a very lucid account of the principal steps in the development of the human lymph, or chyle-corpuscle, into the red corpuscle:

"The white corpuscle, at first tuberculated, containing many granules, and darkly shaded, becomes smoother, paler, less granular, and more dimly shaded or nebulous; changes corresponding with those which Mr. Wharton Jones describes as from the coarsely to the finely granular stage of the *granule-cell.* In these stages the cell-wall may be easily raised from its contents by the contact and penetration of acetic acid, or by the longer action of water. In the regular progress of development, it becomes at length impossible to raise the cell-wall from its contents. Then the corpuscles acquire a pale tinge of blood colour, and this always coincides with the softening of the shadows which before made them look nebulous, and with the final vanishing of all the granules, with the exception sometimes of one which remains some time longer, like a shining particle in the corpuscle, and has probably been often mistaken for a nucleus. The blood colour now deepens, and at the same rate the corpuscles become smooth and uniform; biconcave, having previously gradually changed the nearly spherical form for a lenticular or flattened one; smaller, apparently by condensation of their substance; more liable to corrugation and to collect in clusters; and heavier, so that the smallest and fullest coloured corpuscles always lie deepest in the field."—p. 69.

In conclusion, we have only to repeat the opinion above offered, that this treatise bids fair to obtain a place in the student's library, to which honour it has an undeniable claim.

Obstetrics: the Science and the Art. By CHARLES D. MEIGS, M. D., Professor of Midwifery and the Diseases of Women and Children in the Jefferson Medical College at Philadelphia, &c. Philadelphia, Lea and Blanchard. 1849. 8vo. pp. 685.

AMONGST our transatlantic obstetric brethren, none at the present day enjoys greater eminence or a wider fame than Dr. Charles Meigs. An author of established merit, a professor of midwifery, and a practitioner of high reputation and immense experience,—we may assuredly regard his work now before us as representing the most advanced state of obstetric science in America up to the time at which he writes.

Dr. Meigs, be it observed, is no novice at authorship, is no mere candidate for fame; the latter he has obtained. Whatever he states, therefore, comes invested with an air of authority, and will, no doubt, sway the opinions and practice of many; but on this very account it behoves us to examine the contents of his book with close scrutiny, and to declare our convictions with undisguised candour. We trust to be forgiven, should we find occasion to differ on some points with so high an authority as Professor Meigs, for whom personally we entertain every sentiment of respect and admiration.

Dr. Meigs evidently appears to be a man of original mind, who thinks and reasons for himself, and is not content to follow with undeviating steps in the beaten track of his predecessors, however eminent they may have been. Indeed he himself candidly tells us that "he is not much accustomed, in his medical transactions, to be guided by what are called authorities." Every page of his work bears this independent character, not only in the matter, but most conspicuously in the style and the language. He writes in a free, unembarrassed manner, rather unlike what we are accustomed to in scientific or medical treatises; at the same time he conveys his meaning satisfactorily, and carries the reader along without producing any of that feeling of weariness or monotony so apt to be induced by a more methodical and purely didactic style. No doubt he occasionally makes choice of words that sound a little harsh and uncouth, but for this *we* cannot in justice pass censure upon him; to do that is for an *American*, not for an Irish or an English critic.

In the preliminary observations, our author defines midwifery as "the art of assisting women in labour," and a midwife or accoucheur as "one who assumes the conduct of cases

of labour;" whilst "an obstetrician is a physician who, in addition to a general knowledge of physic and surgery, adds the special information that is necessary for one having the peculiar charge of all sexual affections, whether in the department of midwifery proper, or in other complaints of the sex." —p. 17. Now although this is a purely arbitrary distinction, having no foundation in the respective etymology of the words, still it meets our cordial approbation, and we hope it will be generally recognised, as the want of such a distinction has become a source of much inconvenience in medical writings.

Dr. Meigs divides his book into four parts, of which the first two treat of the anatomy and physiology of the organs subservient to reproduction. Part III. is on "the therapeutics and surgery of midwifery;" and Part IV. is devoted to the management and diseases of the "neonatus," or young infant. As the first part is chiefly elementary, it need not detain us long. With Baudelocque and the French school generally, Dr. Meigs recognises six positions in which the head may enter the pelvis at the beginning of labour; and to the successive changes which it undergoes during its transit, and upon its expulsion, he gives the names of *flexion*, *rotation*, *extension*, and *restitution*, this last implying the turn made by the head immediately on clearing the outlet. These four movements are simply the results of rotation upon its vertical and transverse axes; but of that oblique position of the head produced mainly by slight rotation on its longitudinal axis,—in consequence of which, one (the anterior or pubic) parietal bone is always lower down than the other,—he makes no distinct mention. To the anatomical description of the generative organs, he adds many excellent practical remarks upon the diseases and abnormal conditions of these parts. The minute structure of the Graafian vesicle and of the contained ovum, together with a short account of the discovery of the latter, is clearly and satisfactorily given. His observations on the corpus luteum fill ten pages; but nearly the half of this space is devoted to the consideration of a discovery he supposes he has made, viz., that the yellow matter is of a true vitellary nature. He thinks it is "deposited outside of the inner concentric spherule or ovi-sac of the Graafian follicle" (p. 107); and that this deposition, beginning prior to the rupture of the vesicle, tends to bring about this result, and the consequent extrusion of the ovule. The position he assigns to the yellow matter is in accordance with the views of Dr. Montgomery and Dr. Patterson; but we think that the researches of Raciborski and Cazeaux throw considerable doubt on its vitellary nature, and also upon the opinion that

its secretion commences before the discharge of the ovum. Adopting the notions of some modern continental ovologists, Dr. Meigs seems to regard the corpus luteum merely as the sign of a "finished ovulation," and remarks:

"Every oviposit is followed by a corpus luteum, which is larger or smaller according to circumstances. Many women have scarce discernible ones after conception; others have very large ones. The true and false corpora lutea differ only in magnitude, not in their essential nature."—p. 115.

Now, without for one moment disputing the common origin of the menstrual corpora lutea and those succeeding to conception, we still cannot help thinking that the physiologists who deny to the latter any peculiarities which constantly serve to distinguish them from the former have come to this conclusion more from theoretic inference than from direct observation; whilst, on the other hand, a large mass of evidence can be brought forward to prove that the *true* corpus luteum (or that resulting from fecundation of the ovum) does possess many striking and unequivocal characters. Of the many dissections we have witnessed of women dying during pregnancy or the puerperal state, there was not one in whom a well-marked true corpus luteum was absent; and, further, although we have examined the ovaries of numerous females whose menstruating functions had been duly performed up to the period of dissolution, yet in no single instance was there anything to be found, which could be mistaken for a *true* corpus luteum.

The second part of the work commences with the subject *Menstruation*, which our author treats in a very perspicuous manner. Thanks to the labours of Coste, Lee, Negrier, Gendrin, Jones, Raciborski, and Pouchet, we have at last obtained clear and rational views respecting the functions of the unimpregnated uterus and ovaria; and the theory of menstruation, once so involved in doubt and obscurity, now admits of a simple explanation by reference to that natural law, the discovery of which crowned the researches of the above-named physiologists. Rigidly adhering to the doctrine they have established, Dr. Meigs describes the process of menstruation as essentially consisting in the periodical evolution and expulsion of an ovule; the menstrual fluid being an effusion or extravasation, but not a secretion, from the inner surface of the uterus, the result of a local plethora or state of periodic hyperemia of the reproductive organs. In whatever way we may regard it, this is certainly a most important discovery in physiology,

and one that has conferred immense service on practical medicine. This Dr. Meigs forcibly points out by many apt illustrations. In connexion with the subject under review, we may be permitted to remark, that Dr. John Power, of London, appears to have been the first person who advanced the doctrine of menstruation being in some way dependent on the ovaries, and in fact a periodic effort at reproduction. Although his theory was based on hypothetic notions, and interwoven with some erroneous views, still its near approach to the truth reflects considerable credit on his sagacity and discernment. His Essays on the Female Economy were published in 1821, years before the discovery of the human ovum by Baer.

The only disorder of menstruation, noticed by Dr. Meigs, is amenorrhœa. His remarks, though mixed up with some rather extravagant physiological speculations, are yet sound and judicious as regards the management of this complaint. Of ferruginous medicines, he particularly recommends an impalpable powder of the pure metal, prepared at Paris, by M. Quésnesville, the successor of MM. Pelletier and Caventou (*a*).

Chapter VIII. is headed "Pregnancy," and treats of divers matters, including the anatomy and physiology of the gravid uterus, the development of the embryo, monsters, the duration of gestation, abortion, prolapse and retroversion of the womb, some of the diseases of pregnancy, extra-uterine gestation, the signs of pregnancy, &c. Of this great variety of subjects, thus confusedly lumped together, we shall only glance at a few. With Seiler and Velpeau, Dr. Meigs rejects the Hunterian doctrine, that there is a uterine portion of the placenta, and cannot bring himself to believe that any direct vascular communication exists between this organ and the womb. His arguments in favour of this position, if closely looked into, will be found to possess but little depth or weight. In justification of his dissent from the doctrine of Hunter, he further appeals to some apparently very superficial examinations of gravid uteri, in which he was unable to detect the existence of a single vessel passing from the womb to the placenta, the "mucous tractus"(?) having been the only thing broken on separating the two. He seems to regard the facility with which this divulsion can be effected, as going far to prove the absence of utero-placental canals. Notwithstanding this avowal of his objections, he confesses, with the candour that

(*a*) A formula for its preparation is given in the second edition of Dr. Neligan's Treatise on Medicines, p. 396.

bespeaks a truly philosophic mind, that there is a strong argument against the opinions he has adopted, and, conceiving it to be his duty to state it, he does so in the following words :

"The lining membrane of both veins and arteries, which Bichat calls *membrane commune*, and which by Burdach is denominated endangium, is the true blood-vessel, the fibrous and elastic coats being mere additamenta and fortifications of the genuine blood-vessel. In the depths or interior of the viscera, the endangium is applied directly to the gangue of the viscus, which gives to venous sinuses the appearance of mere cells or cavities, particularly in the womb, where they are in some instances as large as a finger. It is a faculty of blood in motion to make a channel or vessel for itself, which vessel is found to be lined with endangium. As the womb expands in pregnancy, the orifices of vessels upon its inner wall become more and more capacious, and possibly the endangium of some of these orifices may be extended, forced, driven, or deeply impressed among the delicate spongioles and tufts of the chorion, giving rise to the appearance of vascular cylinders plunging into the placenta, or passing from it to the womb, and thus uniting the two surfaces, uterine and placental."—p. 179.

In the "argument" above stated, the intelligent reader cannot fail to recognise the peculiar theory of Dr. Reid, which is fully noticed in the review of his physiological labours in our present Number, and the omission of whose name throughout the chapter, or of any reference to his valuable researches, seems to us most unaccountable.

Dr. Meigs is a believer in protracted gestation, and receives with implicit faith the narration of Professor Asdrubali, concerning the signora "who carried twins in the womb over thirteen months." Our author gives the history of a case that fell under his own observation in hospital practice, in which pregnancy was supposed to have "endured nearly fourteen months"!

The remarks on abortion, though very brief, are replete with practical instruction. After describing Dewees' hook, and Dr. Bond's forceps for extracting dead ova, our author gives the following sound piece of advice:

"While I lay before the student these instruments for the extraction of the dead ovum, I ought to warn him against too facile a disposition as to the employment of them, and to assure him they will often disappoint his expectations, and sometimes, where they do succeed, lead to evil consequences as to the mother."—p. 215.

The consideration of the signs and symptoms of pregnancy concludes the chapter; and, allowing for the space taken up by

two cases, this important subject is dismissed in little better than four pages, but the student is referred for full information to the author's "Letters to his Class"(*a*). He enjoins great caution in the administration of emmenagogues to patients with amenorrhœa, in whom the signs of disordered health are absent, lest the unpardonable error be committed of provoking an abortion instead of removing a morbid obstruction of the catamenia. But he further warns the beginner to take special care, in his diagnosis, that he shall first know the woman to be pregnant before he dare venture to pronounce her so. These are golden precepts, and, if always acted on, would preserve the practitioner from many sad mistakes. With the exception of the sounds of the fœtal heart, he seems to have little or no confidence in any of the various signs and symptoms of pregnancy, singly or collectively. Of the placental soufflet he states that he "has not the least confidence in it as an object in obstetric auscultation."—p. 240. Even the ballottement, or "tilting the embryo upon the tip of the finger," does not furnish to his sceptical mind "any sure evidence that the tilted body is an embryo."—p. 239. In common with most accoucheurs, we have always regarded this as a decisive proof of the existence of pregnancy; and, despite the authority of the Philadelphian professor, we must continue of the same opinion till some *facts* be brought forward to shake our reliance on its value.

Dr. Meigs commences the third part of his work with some general observations relating to the character and deportment of the accoucheur. These strike us as being so very truthful and judicious that in justice to the author we partly quote them:

> "In coming now to this third division of our subject, or midwifery proper, the student ought to be informed that the practice of this art is one requiring not only a large amount of obstetrical or scientific information, but also a great deal of prudence and delicacy, as well as knowledge of the world, without which he will scarcely attain to any considerable eminence or happiness in the practice of it.
>
> "Again, so delicate and difficult, in point of conduct and conversation, are the duties of the accoucheur, that there is nothing short of absolute good sense and tact can carry a man without reproach or misfortune through a long career of this business."—p. 244.

Although Dr. Meigs does not professedly adhere to any particular method of classification, he follows in the disposition

(*a*) Reviewed in the Number of our Journal for August, 1848.

of his subject the arrangement adopted by most of the older authors, dividing labours into two great classes, whereof one includes all those we would call "natural labours," as well as the cases of pelvic presentation; whilst to the second class, which he designates "preternatural labours," he refers every case "that cannot be brought to a safe conclusion by the natural powers of the system," or "which, from some complication, whether of disease or accident, exposes the mother after delivery to the most imminent danger of death." This latter class, it will be observed, is very comprehensive, embracing not only one division of the preternatural, and all the difficult and anomalous cases of Denman, but every labour complicated by any disease whose presence at this particular period may endanger life.

Respecting the use of the lancet in labour our author gives very prudent counsel. He is no advocate for the copious depletion so much practised and so highly lauded by his countryman, Dr. Dewees; on the contrary, he discountenances large bleedings, or even beyond sixteen ounces, on ordinary occasions, and with this our own experience fully accords. We feel compelled to dissent from him, when he advises the "powerful resource" of introducing the hand into the vagina or uterus, for the purpose of altering the position of the head, in every case where it is not descending as favourably as might be wished. Such practice, we think, may very justly come under the denomination of "meddlesome midwifery," which Dr. Meigs himself so justly deprecates, and cautions the student against. His views upon the nature of hour-glass contraction of the uterus are confirmatory of the doctrine first promulgated by Dr. Douglas, of this city, namely, that this is never a primary cause of retention of the after-birth, but consequent upon morbid adhesion(*a*). So strongly impressed is Dr. Meigs with the truth of this doctrine, that he "heartily and warmly" advises the student "to introduce his hand to separate the placenta, as soon as he can clearly determine that the real hour-glass contraction does exist."—p. 393.

Some pages are devoted to etherization, the subject being introduced in the following emphatic words:

"In speaking of the various points in the conduct of a labour, I cannot well eschew to say something upon the employment of

(*a*) Dr. Douglas's paper was first published in the sixth volume of the Transactions of the London College of Physicians, 1820.

those anæsthetic agents, whose recent irruption into the domain of medicine and surgery has been so sudden, violent, and overbearing." —p. 315.

He publishes Dr. Simpson's letter to him, and his own reply, with the contents of which our readers must be already familiar. Dr. Meigs adheres firmly to the opinions he expressed in this celebrated letter, but admits, as every unprejudiced man must, "that there may be instances of severe suffering for women in labour, that ought to be mitigated, or even wholly obviated, by casting the woman into the profound anæsthesia of chloroformization."—p. 316. He omits to notice two serious fallacies that pervade the writings of all the more strenuous advocates for anæsthesia in midwifery, and which form the basis of many of their arguments for its general employment. The first of these is, their statement that the pain of labour is analogous, as regards its effects, to that produced by disease or the surgeon's knife; whereas, to use the words of Dr. Montgomery, "no two things having a partial resemblance can be more essentially dissimilar;" the one being a healthy, natural, physiological pain, and the other a morbid, unnatural, pathological pain. The second grand error into which these ardent defenders of the Lethean practice have fallen, is their asserting that pain is the destructive agent in protracted labours; the truth of which proposition may be very fairly impugned, since experience amply shows that the pain is only a subordinate element of danger, and that the effects of tedious labour most to be dreaded arise from the long-continued muscular exertion,—which, as Dr. Simpson has explained, was implied in the primæval curse,—and the severe pressure and contusion sustained by the soft parts, causing fever, local congestion, inflammation, and gangrene(*a*).

The twelfth chapter contains remarks upon presentation of the pelvic extremity of the fœtus. Dr. Meigs' directions for the management of these cases are most ample, but he greatly exaggerates the frequency with which recourse to the forceps is advisable in order to complete the delivery. No practitioner in these countries ever dreams, we believe, of "ordering a forceps to be got in readiness as soon as he ascertains that the presentation is not one of the head;" and yet such is Dr. Meigs' "unfailing custom." We can only just conceive a case in which

(*a*) Dr. Montgomery's able and scholarlike paper on this subject appeared in our Number for May, and should be perused by every one interested in the question of obstetric anæsthesia.

they might be required, never having seen an instance out of the hundreds that have come under our observation. The causes of pelvic presentations he thinks must be purely accidental, and adds, "the natural presentation is that of the head, which is turned towards the os uteri from the earliest period of pregnancy."—p. 345. The same opinion he also expresses in two other places (pp. 67 and 184). On this point we differ from the Professor, and our reasons for doing so we shall briefly state. The position of the fœtus *in utero* during the successive periods of gestation is a subject that has only of late years attracted close attention; there is abundant evidence, however, to warrant the conclusion that up to the seventh or eighth month the pelvic and cephalic extremities of the fœtal ovum present at the os with nearly equal frequency. Thus, according to M. P. Dubois, the frequency of presentations of the lower extremities is found to increase in proportion as the expulsion of the fœtus takes place near the early periods of pregnancy; and in Drs. M'Clintock and Hardy's Practical Observations on Midwifery it is stated that, out of 108 premature children, twenty-nine presented with the lower extremities; whilst of twenty-seven premature births, the particulars of which are now before us, the feet or breech presented in eleven.

Dr. Meigs' description of the process of spontaneous evolution coincides in all important particulars with that of Dr. J. C. Douglas.

Of all the complications of labour, there is none which the accoucheur should be more thoroughly acquainted with than hemorrhage; and accordingly we find Dr. Meigs devoting many pages to its consideration. His disbelief in the direct and intimate vascular union of the placenta and uterus has been already mentioned; and now, in order to account for the enormous sanguineous discharges which the gravid womb is capable of yielding, he broaches an opinion which, how ingenious soever it may be, is nevertheless wholly unsupported by so much as a shadow of proof. He writes:

> "When blood escapes from the uterus, it must be, I think, in consequence of a hemorrhagic nisus or sanguine determination, like that which sometimes causes the effusion of blood from the Schneiderian membrane, in those cases of epistaxis that come on spontaneously."—p. 377.

Upon the means of diagnosing between accidental and unavoidable hemorrhage he gives very scanty information; and yet this is a question of primary importance, and oftentimes most difficult of solution. The plan of detaching the placenta

in cases where its insertion over the os is the cause of flooding,—a practice suggested so long back as the year 1799, by Dr. Chapman,—receives no countenance from Dr. Meigs, as will be seen from the following passages:—

"To say that the detachment of the placenta, without any consequent reduction of the superficial contents of the uterus, could arrest a hemorrhage by breaking off the curling arteries (as they are called) of the womb, appears to me quite unphilosophical, for there are thousands of facts of ante-partum and post-partum hemorrhages to prove that the arrest of hemorrhage is the consequence of condensation of the womb under its muscular contraction."—p. 388.

"I cannot but think that, in any case in which it is possible to detach the whole of the placenta, it would be also possible to introduce the whole of the hand, and thus commence at once the operation of turning, which ought to be esteemed as the essential indication of treatment in placenta prævia, and which, the earlier it is done, so much the greater chance does it give, both of rescuing the child and saving the woman from fatal losses of blood."—p. 389.

He barely alludes to the stimulant and restorative measures required to support the system under the exorbitant demands made upon it in cases of severe flooding; but he insists strongly on the necessity of confining the patient to a horizontal position for some time afterwards, and alleges that during the deliquium so apt to be induced by a neglect of this precaution, the formation of false polypus in the cavities of the heart is very likely to take place. It is not without considerable surprise we find Dr. Meigs recommending the exhibition of vitriolic acid in infusion of roses, acetate of lead combined with opium, &c., for post-partum hemorrhage. As well might one try to extinguish a conflagration with a penny syringe, as to expect that such means could be of any—the slightest—utility in controlling uterine hemorrhage at the full term of pregnancy; or, to use a favourite illustration of the late Professor Hamilton of Edinburgh, it would be just as rational practice to try and stop the bleeding from a cut finger by the administration of internal astringents.

Dr. Meigs entertains the most profound dread of small-pox attacking a pregnant woman, observing that, "if she be confined or suffer abortion, she shall hardly escape death by hemorrhage from the womb, or by metro-phlebitis, coming on early after the detachment and expulsion of the placenta."—p. 431. To such an extent is he imbued with this variola-phobia that we find the following stringent precautions enjoined:

"Now let the student beware not to expose his gravid patient

to the least danger of variolous infection; and, therefore, let him never dare, under any circumstances, to vaccinate a pregnant woman, or one recently confined." . . . . . "I reiterate the assertion that the virus of small-pox is eminently inimical to the life of the pregnant female; and I aver that the virus of the vaccine inoculation is little less so than unmitigated small-pox." . . . . . "I am firmly convinced that it is far better for the physician, during the epidemic of small-pox, to leave his pregnant patient to the chance of a natural infection, than certainly to bring her within the scope of its virulent power by a vaccine inoculation, which is but a variolous inoculation modified by the generical force of an inferior zoological genus." —p. 432.

It would be a mere waste of time, we believe, to enter into any serious refutation of the above statements regarding the danger of vaccine inoculation to pregnant females. We do no more, therefore, than express our astonishment at the opinion, and our anxious wish to know the facts upon which it is founded.

We heartily concur in the author's sensible remarks upon the practice of turning in cases of deformed pelvis. The objection he advances is one that has always appeared to us to possess great weight. He writes:—

"I am not prepared in this place to go so far as Professor Simpson of Edinburgh, in recommending a resort to version in bad pelves; and my hesitation arises from this, that the mensuration of the pelvis, being rather a non-dependable process, there is reason to fear that the incautious and inexperienced accoucheur might, by too free a recommendation of it, be led to institute this method in cases where the reduction of the diameters is so considerable as to render an excerebration indispensable for the delivery."—p. 458.

Laceration of the womb and vagina our author justly describes as "the most terrible accident which can happen to women in labour;" yet the subject is dismissed in little better than two pages, and even this limited space is unprofitably occupied. Upwards of forty pages are devoted to the history and uses of the forceps, and we regret that we cannot afford space to give a particular analysis of this chapter. We can only say that, where the child is alive, Dr. Meigs appears to set almost no bounds to the applicability of the instrument. Even in cases of regular impaction, where the head is so tightly jammed into the pelvis "that the forceps can find no space in which to pass," we find him, paradoxical though it may seem, urging that the attempt should be made. Such unqualified recommendation of the forceps, from one in Dr. Meigs' authoritative position, is much to be deplored; as it is calculated to make this instrument—so pre-eminently service-

able when rightly used—an agent of destruction, as well as a source of disappointment and professional obloquy. These strictures we consider to be the more necessary, as Dr. Meigs tells us in his dedicatory letter that this book he has "addressed to the student, and that to him he speaks in every page." In place of the crotchet, which he pronounces a "detestable instrument," he uses two pair of forceps or pliers, with long handles, for extracting the head. The induction of premature labour Dr. Meigs thinks to be legitimate under certain circumstances; but it is apparently with extreme caution and reserve that he speaks of this operation, nor does he give any directions as to its performance.

Inversion of the uterus is the subject of the eighteenth chapter, and upon the acute form of this disease he makes some excellent practical observations. The prominent feature of novelty, however, is the announcement of his "opinion that there are instances of inversio uteri, in which, by means of some power, the processes of which are at present not known or understood, the womb reposits itself."—p. 555. In support of this he relates three cases, which, together with his remarks thereon, well deserve the attention of obstetricians.

With regard to puerperal fever our author declares himself a decided non-contagionist, and will only admit one species of the disease—the inflammatory, for the cure of which the bold and repeated use of the lancet is the invariable resource. Notwithstanding these erroneously exclusive views (in which he strictly follows Gordon), the article in question contains many valuable hints and observations upon this one form of puerperal fever. The truthfulness of the following picture must be acknowledged by every one:

> "A woman lies down on the *lit de misere* in order that she may give birth to a child; an attack of puerperal fever too often converts it into her bed of death. A man goes to his bed in fever under the apprehension of approaching death; he is RESCUED by the physician, but the accouchée who perishes is LOST. There is a great difference in the sentiment connected with the two."—p. 581.

Dr. Meigs concludes this chapter with some extracts from a letter to him from Dr. Collins, in which this gentleman clearly demonstrates that the "vehement antiphlogistic method" of Dr. Meigs, in the treatment of puerperal fever, was wholly inapplicable to the majority of cases under his care in the Dublin Lying-in Hospital.

In the fourth part of the work Dr. Meigs gives most admirable directions as to the food, clothing, and general manage-

ment of new-born infants, as well as for the treatment of the more common diseases observable in this early stage of existence. Cyanosis neonatorum is treated of at great length, but his observations chiefly refer to one form of this affection, viz., that in which the foramen ovale remains patent after birth. For the treatment of this he confidently recommends the observance of a nearly horizontal decubitus on the right side, in which position of the body he supposes the blood of the left auricle will, in obedience to the law of gravity, press upon and close down the valve of Botal. He cites many examples from his own, as well as from the experience of others, in which this simple mode of treatment was followed by a permanent cure, or marked temporary relief.

It is with no small regret we have been obliged to notice many chapters of this volume in a very rapid manner, and to pass others over altogether. Amongst the latter are to be found some highly valuable remarks upon deformed pelvis, atresia vaginæ, ergot of rye, milk fever, &c. &c.

As the impression on the mind after reading a work is in some measure influenced by the opinion formed of its object and character, it is not unjust or unkind to say that Dr. Meigs' book has little pretensions to being a complete systematic treatise; and that whoever reads it with any such expectation will be grievously disappointed by its want of arrangement, by the omission of many important subjects, and by the little reference to the writings of contemporary or standard authors. But, on the other hand, if it be viewed as a record of the experience and observations of one who has passed many years in extensive practice, and is gifted with a more than ordinary amount of discernment and talent, we are convinced that its attentive perusal will more than repay the reader, by affording him both pleasure and instruction.

On many questions of considerable moment our opinions do not agree with those of Dr. Meigs; and in some points of practice we even regard his precepts as evincing a reprehensible fondness for artificial interference, as well as a want of confidence in the powers of nature to remedy or overcome comparatively trifling obstacles. Notwithstanding these differences, however, we are free to confess that we read this volume with much interest and gratification. We admire the spirit in which the author writes; his style, too, has an air of unrestrained freedom and novelty about it that is very fascinating; and on many topics he supplies information not to be found elsewhere. The wood-cuts and diagrams are at least effective, if not very artistic; and of the numerous cases introduced it is not too much

to say that they are apposite to the subject in hand, and are related in a clear, impressive manner. On the whole, we consider Dr. Meigs' book as a valuable acquisition to obstetric literature, and one that will very much assist the practitioner under many circumstances of doubt and perplexity.

On the Diseases of Infants and Children. By Fleetwood Churchill, M. D., M. R. I. A., &c. &c. Dublin, Hodges and Smith. 8vo. pp. 650.

The period is not very remote since the diseases of infancy and childhood began to engage the distinct attention of physicians, and to form the subject of special treatises; and with such perseverance and success has this department of medicine been cultivated, that from, comparatively speaking, a mere point, it has expanded into a wide field of knowledge and pathological inquiry. Within the last few years an immense number of excellent monographs, bearing reference solely to the maladies of early life, have appeared in England, France, Germany, and America. These have become so numerous, and the amount of original matter which they contain so large, as to render a well digested treatise, exhibiting the opinions and practice of leading authors, a great desideratum at the present time. Now, we think that the work before us is eminently calculated to supply this want in our medical literature; and after an attentive perusal of its contents, we hesitate not to say, that it is one of the most comprehensive ever written upon the diseases of children, and that, for copiousness of reference, extent of research, and perspicuity of detail, it is scarcely to be equalled, and not to be excelled, in any language.

From Dr. Churchill's known ability and industry, we were led to form high expectations of this work; nor were we deceived. Its learned author seems to have set no bounds to his researches in collecting information, which, with his usual systematic address, he has disposed of in the most clear and concise manner, so as to lay before the render every opinion of importance bearing upon the subject under consideration.

The first part of this work, embracing five chapters, chiefly relates to the hygiene of infantile life. Our author, in the "preliminary observations," adduces statistics, drawn from various authentic sources, to show the high rate of mortality during childhood and infancy, and he succinctly points out the causes of disease to which the infant is exposed before, at, or immediately after its entrance into life. In the four subsequent chapters he briefly but

clearly lays down the principles which should guide us in regulating the food, clothing, and general management of infants. The observations on each of these heads are just what we should have expected them to be,—sound and judicious. This testimony we freely give, even though there may be one or two points on which we would differ with the learned author. Thus we think that the custom of giving aperient medicine to every newborn babe is open to serious objection ; no doubt many will require it, and others will be nothing the worse of it, but some will sustain positive injury from this rude forcing of natural processes. The ingestion of food will generally stimulate the bowels to act within ten or twelve hours; but if this time elapse without an evacuation, then a small dose of castor oil, as recommended by Dr. Churchill, may be given with propriety and advantage. Our author does not sanction the present fashion of infants going in their bare heads; "experience," he observes, "has proved the folly of this attempt at braving natural laws to gratify a theoretical prejudice. In this and similar ways, I dare say, a *race* may be hardened, but it is by cutting off the weaker members."—p. 39.

The second part of the work commences in Section I. with the diseases of the cerebro-spinal system. The plan pursued by the author in each section of the present division of the volume is, first, to notice the diseases by which the fœtus is most frequently attacked during intra-uterine life; then to treat of those which it presents to us at birth, whether of long-standing or acquired during parturition, together with certain malformations which require treatment; and lastly, to enter at length into the consideration of the diseases which affect infancy and childhood. This is an excellent arrangement, and very convenient for purposes of reference. Having described the lesions of which the nervous centres may be the seat before or at birth, he makes some admirable remarks on "irritation of the nervous system," particularly noticing the two opposite states of the constitution under which it may present itself. A clear and perfect comprehension of this condition will materially assist the practitioner in his medical intercourse with children, and will oftentimes enable him to ward off impending danger, or induce him to abstain from needlessly active measures. Dr. Churchill is unable from his own experience to throw any light upon that obscure and enigmatical affection, "trismus nascentium." To the long list of remedies he has mentioned as having been fruitlessly tried in this disorder, may be added Indian hemp. In a limited number of cases we have tried the tincture of the resin, prepared by Mr. Donovan, but it merely seemed to retard

the progress of the disease, and perhaps to mitigate the severity of the fits, without lessening the certainty of a fatal issue.

Amongst the diseases incident to early life, Convulsions, though strictly but a symptom, must ever hold a prominent place, being an occurrence no less frequent than formidable. As the grand question for solution in all cases of the kind, is to ascertain the cause of the attack, we find that nearly every division has this for its basis. Dr. Churchill makes three forms or varieties, viz.:

"1. Primary or essential convulsions, arising from irritation of various kinds, mental emotion, &c.; 2. Sympathetic convulsions occurring in the course of fevers, or organic diseases of any kind, excepting those of the brain or spinal marrow; and 3. Symptomatic convulsions, connected with diseases of the head or spine."—p. 97.

Though perhaps not the most scientific, this is, nevertheless, a good classification for practical purposes; and, in order to illustrate its application, we quote the following highly instructive comments:

"Suppose we are called to a child from one to six years old, strong and hitherto healthy, who has had a convulsion following a fright, blow, fall, indigestion, &c. The convulsion may of course be primary, sympathetic, or symptomatic, but upon further inquiry we find that the child was perfectly well up to the moment of the attack, that the exciting cause is plain, the constitution sound, the access not very violent, and that there are no other head symptoms. So far, then, the case is one of primary or sympathetic convulsions; but further investigation proves that there is no disease of the chest, abdomen, &c., and we conclude that the convulsions are primary or essential. But if, on examination, we discover evidences of pectoral or abdominal disease, acute or of long standing, we must then infer that the convulsions are sympathetic, and we cannot be too minute in our examinations of all the organs in every case, as the treatment as well as the diagnosis will depend upon it. In these primary and sympathetic attacks the brain and nervous system are in a state of sympathetic irritation only in most cases, but we cannot be quite sure of this when the fit comes on in the course of some chronic disease, as, for instance, in tuberculous affections, in which it is quite probable that the brain may be the seat of a similar deposit. Such cases render the diagnosis very difficult."—p. 107.

The subject of Hydrocephalus is treated with that minuteness of detail which its very great importance so justly claims. Without taking morbid anatomy solely for his guide, and at the same time without entirely discarding it, our author describes four species or phases of the disease. The *first* corresponds to the acute hydrocephalus of Gölis and others, and to

the "meningite simple aigue" of Barrier, and Rilliet and Barthez; the *second* form, corresponding to Cheyne's first species, is more deliberate in its commencement and progress, and very often occurs as a secondary affection; the *third* form is the tubercular meningitis of French authors, and in point of frequency should hold first place; and the *fourth* form is the water-stroke of Gölis and the Germans, and the apoplexia hydrocephalica of Cullen. Under each of these heads is given a very accurate portraiture of the characteristic features and course of the complaint; indeed, we may truly say that in everything relating to the symptoms, diagnosis, pathology, treatment, and prophylaxis of water on the brain, this chapter is replete with information, and is in itself a compendious exposition of the existing state of knowledge upon this disease. Chronic hydrocephalus, encephalitis, apoplexy, and the other lesions of the nervous system, are handled in the same satisfactory manner.

The chapter on Laryngismus Stridulus, or, to use the more simple and explicit term of Sir Henry Marsh, spasm of the glottis, is an able and instructive one. As the pathology of this affection has been a matter of dispute between some justly respected authorities, Dr. Churchill fully investigates this question, stating the different opinions entertained, and the grounds on which they are based. His testimony is against the doctrine which imputes the disease to enlargement of the thymus or bronchial glands, and in this conclusion he is strongly supported by many writers, and especially by Dr. James Reid, the latest author on the subject. Dr. Churchill has found benefit from the use of a small seton in some cases, which accords with our own experience:

> "It will be advisable," he remarks, "in most cases, to apply some form of counter-irritation, either some irritating liniment, or a blister, or, what I have found far better, a small seton in the arm. In one case under my care, the moment the seton discharged fairly, the spasms ceased, and whenever it was left out they returned."—p. 196.

He strongly insists on close attention to the diet of children who are liable to laryngeal spasm, and also on the necessity of pure mild air; and certainly these are circumstances whose importance cannot be overrated in the management of the complaint.

Our author only recognises two stages in Pertussis, the catarrhal and spasmodic, which is the simplest and most natural division of the disease. The physical signs audible during the paroxysm

of hooping-cough have been described by Laennec, Williams, and others; but none of these stethoscopists, we believe, have assigned any peculiar character to the respiratory sounds in the interval between the fits of coughing. The result of several carefully conducted examinations leads Dr. Churchill, however, to believe that the murmur of inspiration and expiration does present at these times a certain character quite peculiar to pertussis. As this is a point of considerable consequence and novelty, we must, in justice to Dr. Churchill, quote his own words:

"I have examined a great many children at intervals from one paroxysm to another, and I have in a great many cases found that, after the chest had been cleared by the last cough and vomiting, the respiratory murmur or inspiration was louder and more rough than usual, nay, in some cases, it had a rather loud, brazen sound, something resembling a loud sonorous râle, as if the air was passing through tubes much narrower than usual. It is perceptible, also, in expiration, though more feeble. This sound may continue until the mucus begins again to accumulate, and then it will be exchanged for the large mucous, bubbling sound, which increases until the next cough, and is almost universal. In milder cases the rough, dry sound is more feeble, though generally audible, and I think this loud, rough murmur of inspiration and expiration quite peculiar to pertussis. The chest is clear on percussion throughout this stage in simple cases."—p. 203.

It remains for subsequent experience to establish or overturn these conclusions. Should Dr. Churchill's observations be found correct, then we shall be in possession of a most valuable diagnostic of pertussis, and one, too, which will be available at those periods in which we have, at present, no means of positively diagnosing the disease. For mitigating or suspending the spasm in hooping-cough, Dr. Churchill has tried the inhalation of sulphuric ether at the commencement of the fit, and in most of the cases with marked success. Chloroform he has also employed, and with a like result. In two-thirds of the cases the course of the disease was decidedly shortened by this treatment, and in no instance was insensibility or the least inconvenience occasioned. As the complications of hooping-cough are the sources of greatest danger and difficulty in its management, Dr. Churchill devotes much space to their consideration, and his remarks on each of them abound in wisdom and practical instruction.

Chapter IV. contains a masterly treatise on Croup, and displays the most patient investigation, and the most calm, truthful collation of facts. That much-disputed question as to the

propriety of laryngotomy in this disease, receives full and impartial consideration, and a great mass of evidence is adduced on both sides. He concludes his review of the arguments for and against the operation with the following summary of the objections to its employment, to each of which we feel bound to subscribe:

"1. That the larynx is not mechanically closed by false membrane; that in all cases, as Dr. Cheyne has remarked, there is sufficient space for the access of air; that if the larynx be closed it must be by spasm in addition to the exudation; and that, therefore, to attempt relief by a mechanical operation would be superfluous, to say the least of it.

"2. That it is extremely difficult to say that exudation has taken place, and still more to fix the limits of it, and pronounce in any case that it has not extended below the larynx; and yet upon this depends the utility of the operation; for,

"3. If the false membranes have extended below our incision, the operation, being purely mechanical, can afford no relief, but may seriously add to the danger.

"4. Bronchitis or pneumonia may exist at the time of the operation, or may very likely arise very soon after, and render it altogether useless.

"5. The operation itself is not without danger, nor quite so easy as has been stated, especially with young infants. In addition to hæmorrhage and escape of blood into the trachea, the patient may be attacked by prolonged syncope, asphyxia, or convulsions, as occurred in M. Trousseau's practice, and occasionally either of them may prove fatal.

"6. That the risk of inflammation and other accidents after the operation is very considerable, and materially diminishes its value.

"7. That the results of the operation hitherto, although successful to a considerable extent, are not sufficient to justify our having recourse to it under ordinary circumstances. 'If,' says Mr. Porter, 'it were possible to place a host of those cases in which bronchotomy had not proved serviceable, in array against those wherein it had seemed to be useful, it would scarcely be necessary to advance any further argument in proof of its uncertainty.' "—p. 259.

We lament being compelled thus briefly to notice this valuable article; not less, however, do we think it deserving of special attention. Dr. Churchill does not allude to the topical application of solution of nitrate of silver in croup; but we believe, when he wrote his fourth chapter, Dr. Green's book on that subject had not appeared in this country. The three remaining chapters of this section are upon bronchitis, pneumonia, and pleurisy. Like the preceding ones, they are rich in information and full in detail, leaving no point of importance or

interest unnoticed. When speaking of pericarditis, Dr. Churchill strongly recommends to his readers a rule he has adopted for many years, and one whose value we can fully attest:

"When first called to see a child, no matter for what disease, to examine every organ of the body, and to repeat this examination at intervals of a few days. By so doing we shall often ascertain the commencement of secondary affections before they give rise to any complaint of distress."—p. 339.

Of the congenital malformations of the digestive system, hare-lip, cleft palate, and imperforate anus, are described at length, with their respective modes of treatment. Then follows a chapter on Dentition, from which we quote one or two observations about that lightly esteemed operation of lancing the gums, which, we are satisfied, is more often undertaken than rightly understood or performed:

"A slight scarification of the gums, for the relief of teething, is of no use whatever; they must be cut down until we feel the lancet touch the tooth, and to the full extent of the swollen gum, and a little further. I have often seen the irritation continue as severe as ever after an incision over the central incisors, because the operator had not noticed that the lateral ones were pressing forward, and so of the other teeth."

"And I would beg to impress on the student that, owing to the fright of the mother or nurse, and the cries and resistance of the child, to lance the gums effectually is by no means an easy operation, but one that requires both firmness and deliberation to avoid, on the one hand, cutting too superficially or too limitedly, and, on the other, wounding the mouth or tongue."—p. 375.

Upon the various diseases of the mouth and pharynx in children, Dr. Churchill has brought together a great amount of information. Besides all the forms of stomatitis, he minutely describes the symptoms and treatment of tonsillitis, cynanche parotidea, diphtheritis, putrid sore throat, and abscess behind the œsophagus.

Diarrhœa and Dysentery are very fully considered: of the former, our author enumerates five different varieties, making the character of the discharges the basis of the division, viz., the feculent, bilious, mucous, chylous, and lienteric diarrhœa. Objection may perhaps be taken to the term *chylous* diarrhœa, since it is still a disputed question whether it really is chyle which passes off in these cases. For the treatment of diarrhœa, which so often well nigh exhausts the patience and skill of the practitioner by its obstinacy, Dr. Churchill enumerates a great variety of remedies, some of which are but little known in this

country, and well deserve the attention of physicians. He very properly devotes a chapter to "Helminthiasis," or verminous complaints of children, although he frankly confesses his disbelief in the existence of any symptoms pathognomic of worms, and agrees with Dr. West that the only proof of worms being present is seeing them. In this conclusion we cannot fully concur, and yet we think he hardly exaggerates when he says: "Even at the present day, any disease whose nature is not very clear, any symptom of disorder of the digestive system, or of general nutrition, which is obscure, is solved by the magical abracadabra of worms." To the ordinary list of anthelmintics he adds several others whose efficacy is attested by high authorities; so that the practitioner is here furnished with many resources against these entozoa.

Diseases of the liver and spleen form the subject of the twentieth chapter, which may be said to contain the substance of all that is at present known of these infantile complaints. Dr. Battersby's excellent and original monograph, which appeared in the fourteenth Number of this Journal, is done ample justice to in this article. Dr. Churchill's observations upon Chronic Peritonitis merit particular attention. To the usual modes of treatment this not generally recognised disease is little amenable, so that any other plan holding out a prospect of better success is deserving of every attention. After reciting the usual remedies, he proceeds to observe:—

"But our principal reliance is upon mercury, given so as to affect the gums, if possible. I believe that the credit of thus administering mercury in this disease is due to Sir Henry Marsh, as I have found no allusion to it in any authority. It may be exhibited internally or by inunction; in many cases the latter is preferable, as, when diarrhœa occurs, the bowels are too irritable. A scruple of the strong ung. hyd. should be gently rubbed in over the abdomen, night and morning, and continued until the gums are touched, or the disease shows signs of yielding to the treatment."—p. 524.

The fifth section, at which we have now arrived, contains a short sketch of those cutaneous diseases which occur most frequently in children, and as the observations thereon make no pretensions to originality, we may pass them over without further comment, merely remarking that here, as elsewhere, our author is clear and concise in his arrangement and language.

We cannot sufficiently praise the comprehensive and lucid manner in which Dr. Churchill treats of the Eruptive Fevers. Suffice it to say that in no part of the work has he evinced so much judgment and erudition. Indeed it would appear as

though this important section of the work had been the object of much labour and particular attention, and we feel convinced that the most experienced will derive instruction and profit from its perusal. We would gladly have reproduced here some of his valuable observations, but our typographical limits of circumvallation are too rigorously defined to admit of our doing so.

Our general estimate of this work may be easily gathered from what has preceded. We welcome it as a most valuable acquisition to infantile medicine, and doubt not but that ere long it will be in the hands of every practitioner. It is a matter of regret, we think, that the author did not incorporate more of his own personal experience, as such would have considerably enhanced the value of the book. Dr. Churchill's scrupulous care on all occasions to render full justice to every author, and his punctilious honesty in naming every authority whose opinion or practice may happen to coincide with his own, are alike conspicuous, and demand our warmest admiration; such conscientiousness is not, we regret to say, common at the present day. Although he has omitted to notice some diseases specially belonging to children, still we regard this volume as possessing more claims to completeness than any other of the kind with which we are acquainted. Most cordially and earnestly, therefore, do we commend it to our professional brethren, and we feel assured that the stamp of their approbation will in due time be impressed upon it.

The Microscopic Anatomy of the Human Body in Health and Disease. Illustrated with numerous Drawings in Colour. By Arthur Hill Hassall. London, Highley. 2 vols. 8vo. pp. 578.

This work is now complete in fifteen parts. We have already noticed, with approbation, some of the earlier numbers; but as we regard the publication of a compilation of the kind, in the English language, as a momentous addition to our scientific literature, we think it due to our readers to inform them more particularly of its contents, and to beseech their attention to its subject. The knowledge of life and of disease has yet to be acquired. Who can say that the opinions which have been hitherto put forward, as to the causes of normal or perverted organization, have had any real foundation in a truly logical induction? From the excitability of Glisson to the organic sensibility of Bichat,—the plus or minus vitality of Brouissais,

or the plus or minus waste of Liebig; all are deserving of little more respect than to be regarded as speculative explanations of some few and imperfectly observed phenomena. We have had as yet no Newton nor Jussieu in the philosophy of anatomy; what the one effected for dynamics and the other for natural science,—the discovery of the master chord which held the whole scale in harmony,—remains yet to be achieved for physiology. But Galileos and Keplers necessarily preceded Newton; and had there not been a Linnæus, it is probable that the law of the subordination of characters would never have been applied to the classification of living beings. We pride ourselves in Ireland on being good practical physicians and surgeons; and it is said we effect to sneer at the ultra-refinements of the microscopist and chemist; yet is it not true that we pursue diagnosis and therapeutics merely as arts?—that we are not entitled to claim for them the rank of sciences? Science has been said to be the art of predicting; and certainly the closer we draw classified knowledge towards the domain of syllogism, the more distinct and applicable will become our ideas. But to do this we must accumulate facts, not merely collective facts, such as structure and symptoms, but also, and more importantly, elementary facts, such as primitive cells and fibres, and molecular changes of combination. Kepler was laughed at for his swing-swongs by the practical men of his day, and the microscopist and chemist may be sneered at now; but by the pendulum was measured and tested the law of gravity; and it is only when a sufficient number of phenomena have been exactly observed and faithfully chronicled, that those general laws in nutrition and secretion can be arrived at, upon which philosophical physiology and therapeutics can alone be based. It is with the conviction of these truths that we regard with much pleasure the completion of Mr. Hassall's work. It places at the disposal of our young and working men the various observations made in minute human anatomy by the best micrographers in Great Britain and Germany. Hitherto this kind of knowledge was scattered through many expensive works, or hidden in the transactions of societies; and therefore to be presented with it, in a cheap and compact form, illustrated by drawings sufficiently executed, ought to be considered a great boon. We hope that our young anatomists will avail themselves of it, and speedily put themselves into a position to add to the stores of facts, now accumulating. Microscopical anatomy presents an opening to young men ambitious to distinguish themselves, the neglect of which by the students educated in our schools would occasion us regret. We have no

desire that they should in the slightest degree neglect or postpone those studies which have hitherto so eminently fitted them for the practical duties of their profession; but in the years which generally intervene between the acquisition of a diploma and the occupation of practice, some time may with advantage be devoted to the study of histological anatomy. In our review of Lebert's work, in a former volume, we insisted on the necessity of education to constitute a micrographer. The microscopical examination of a diseased structure, by one previously uninstructed in the use of the instrument, or unacquainted with the natural appearances of the healthy organs, must necessarily be deserving of little reliance; yet we fear that this has hitherto been too much the case in this country. We now repeat our recommendation to those young physicians and surgeons who are, to use a common phrase, "waiting for practice," to accustom themselves to the use of the microscope. Quecket's book will guide them in manipulation; Hassall's will teach them the microscopical appearances of the healthy tissues; and Vogel and Lebert will instruct them in the alterations produced by disease. One of Oberhauser's microscopes, with a power equal to between 500 and 600 diameters, can be obtained for about £6 sterling; and with these materials, and a few simple tests, the young medical man will be enabled to fit himself for the time that is coming, and perhaps win a name of honour for himself and country.

We shall devote a few pages to the appearances revealed to the observer by the microscope in the minute structure of the human organs; by doing so, we shall probably best excite that interest about the subject which we wish to inspire; for we have always observed that the works of nature themselves, speak more strongly to the affections and imagination, than the warmest eulogy of the commentator. We shall, therefore, proceed to exhibit, as correctly as our command of language will permit, some of the peculiarities of animal organization.

Some of the simpler vegetables are known to be composed of a homogeneous and structureless gelatine, containing cells scattered through its substance. Such is the nature of the little plants which occasionally confer a rosy colour on snow or ice; such is the nature of the gory dew, which to this day seems to sweat out of the ground on the field of Hastings. Such are those masses of jelly found amongst moss and heath, and which our peasantry believe to be *fallen stars*. According as we ascend to the examination of more complicated vegetables, we find them entirely composed of cells, each with its own especial walls, congregated together, or placed one after

another, but without any of that investing structureless basis which constitutes the chief part of the plants before alluded to. Now it is remarkable, that the cartilages are the only constituents of the animal framework which at all resemble the structure of vegetables; but the plants which they are like are not the highly developed cellular and vascular vegetables, but it is in the simpler jelly-like algæ that we find their types. Like the latter, they are composed of a homogeneous structureless base, in which, although fibres can be sometimes found, they are plainly a superadded element, and in which no cells can be discovered. Disseminated through this basis, there are numerous cavities in which cells are contained, very similar in structure to the cells of protococcus, palmella, or nostoc, amongst plants.

With the exception of the cartilages, all the other tissues are formed of fibres. These fibres, in every instance, are produced, there is reason to believe, by the development of primitive nucleated cells; these cells become lengthened at opposite extremities, and at last become prolonged into long fibres. This happens as well in the so-called cellular tissue as in the tendons and fasciæ. The areolar tissue, which has been called "cellular" in animals, is not entitled to that appellation in the same sense in which it is applied to the cellular tissue of vegetables. The latter is indeed composed of cells or utricles, little closed sacs applied against each other, and, if not very closely packed, leaving minute passages between them,—the intercellular passages. But the areolar tissue of animals consists of plates crossing each other at various angles, and thus forming cavities which freely communicate with each other; but one of these cavities cannot anatomically be called a cell, for it is really only an interspace among the true anatomical elements. These elements are fibres which, lying beside each other, and coiled so as to present an appearance, when magnified, something similar to a skein of thread allowed to fall on a table, constitute collectively the plates by whose disposition the areolar tissue is constructed. We, in this instance, perceive that animal and vegetable structure is essentially dissimilar.

Vegetable cells, for the most part, soon lose their nuclei. This is not the case with animal fibres. The primitive cells become altered and transformed into long, hollow threads, closed at both extremities, but the nuclei persist without apparent change. This constitutes another marked difference between animal and vegetable organization.

There are, however, cells formed by the animal organism, which are not destined to undergo fibrous transformation. It

is remarkable, in accordance with the view of animal structures given, that those cells that do not change into fibres are always thrown off from the system, either in the form of epithelium or cuticle, or in the secretion of conglomerate or simple glands; and in the few instances in which analogous products are destined to maintain a temporary, although fugitive, connexion with the organism, as in the case of hairs, the cells take on a tendency to fibrous development; the exception thus proving the rule.

The fibres which enter into the composition of the animal framework are of various kinds. Perhaps their physical characters present the easiest mode of classifying them. They may be divided into the inelastic, the elastic, and the contractile. The inelastic are to be found in areolar tissue, the osseous fabric, and fibrous structures, such as fasciæ, tendons, ligaments, &c. The elastic are present in the yellow ligaments and elastic cartilages; a particular variety is also present in the intervertebral cartilages. The contractile are either non-striated and separated, or striated, and bound into bundles by meshes of inelastic fibres (sarcolemma). In the former case they constitute the involuntary, in the latter, the voluntary muscles. These contractile fibres, however, although presenting different appearances to the eye, are essentially of the same nature, as may be proved by treating the striated fibres of the heart with acetic acid, when the striæ will be found to disappear. It is indeed by chemical means that the different kinds of animal fibre can be best distinguished. Thus the inelastic fibres swell, coalesce, and disappear, when acted upon by acetic acid; the muscular or contractile become yellow with nitric acid, and, upon the addition of water of ammonia, change to orange; and the elastic fibres obey neither of these reactions. Neither the muscular nor elastic fibres dissolve by the most prolonged ebullition in water; the inelastic dissolve when boiled in a Papin's digester, yielding gelatine; and the homogeneous structureless basis of cartilage also dissolves under similar conditions, but the solution is not precipitable by tannic acid, which is the case with gelatine.

The nerves are tubes of inelastic fibre (neurolemma), filled with an oleo-albuminous emulsion. After death this emulsion separates, the albumen fixes itself to the internal lining of the tube, and the oil collects into drops. The grey or sympathetic nerves also contain fibres (bands of Remac) in appearance and chemical characters extremely similar to the fibres of the involuntary muscles.

The arterial parietes contain a mixture of the inelastic, the

elastic, and the contractile fibres described. Similar in structure are the walls of the uterus. The veins have inelastic and elastic fibres. The basement membrane of glands is, for the most part, composed of inelastic fibres.

We cannot now enter into the description of the peculiar bodies found within the nervous centres; the remarkable organs connected with certain nerves, the distribution of the various anatomical elements in the structure of the conglomerate and other glands, the variety of cellular formations on the internal surfaces of their ducts, and the important relations of these formations with the process of secretion, are subjects likewise too vast in extent, and too great in importance, to be cramped into a notice such as the present. We merely wish to draw the attention of our readers to the department of microscopical anatomy, and to assure, by a few examples, that the study is one replete with interest, as it is pregnant with most valuable results. Above all, we wish to impress the importance of this study on those who are anxious to cultivate pathology. Nothing is better ascertained than that tumours, in whatever situation they may be placed, are principally composed of the histological elements of the adjoining parts. How useless is it then to waste our time in examining diseased structure, unless we are familiar with the microscopic appearances of the natural constituents of the human body? The argument has but to be stated to be admitted, and yet how many have, without hesitation, given their opinion as to the malignancy or non-malignancy of a suspicious tumour, and that professedly from the assistance of the microscope, who could not distinguish between a section of a ligament and of an involuntary muscle, if exhibited to them in the focus of that instrument.

We cannot conclude without rendering to Mr. Hassall and the publishers of the "Microscopic Anatomy of the Human Body," our sincere thanks for the benefit they have conferred upon the science of our profession.

A Practical Treatise on the Domestic Management and most important Diseases of advanced Life, with an Appendix, containing a series of Cases, illustrative of a new and successful Mode of treating Lumbago and other Forms of Chronic Rheumatism, Sciatica, and other Neuralgic Affections, and certain Forms of Paralysis. By George E. Day, M. D., &c. London, T. and W. Boone. 1849. pp. 342.

The English language, so rich in valuable treatises on all other branches of medicine, is singularly deficient in works devoted to the consideration of maladies which accompany the decline of life; and the effects produced by advanced age on the ordinary diseases to which man is liable are but cursorily noticed by writers on pathology and therapeutics. The late Sir Anthony Carlisle, in a work more popular than medical, published about thirty years since, described some of the disorders of old age, and proposed means for prolonging life. He was followed by Sir Henry Halford, who, in his truly classical essays and orations, without writing a set treatise, put forth some most valuable dogmas on climacteric disease. We next find the subject ably handled by Dr. Holland, in his Medical Notes and Reflections, whose writings, and those of Sir Henry Halford, we doubt not most of our readers have perused with benefit. We cannot call to mind any other work in our language in which these diseases are specially noticed, except that of Dr. Marshall Hall on some of the more important diseases of females, and the essays in our Cyclopædia, Dictionary, and Library of Medicine.

Dr. Day has therefore done good service to the physician in applying the stores of his well-cultivated mind to a further elucidation of the difficulties so often met with in managing the affections of the aged, and pointing out how they differ, both as regards their diagnosis and treatment, from those of younger life. The task he has undertaken he has executed well, and we confidently predict that the pen of so ready a writer, when matured by experience, will do much to advance practical medicine.

In reviewing this excellent volume, we purpose to present our readers with a short sketch of its contents; to do more would be supererogation, as it is one that must find a place in their libraries, to be often referred to in daily practice.

The first three chapters may be in some sort deemed introductory; they are devoted to the consideration of the changes which occur in the system, the preservation of the health,

and general observations on the medical treatment, of advanced life. It is of the utmost importance to be well acquainted with the alterations in the position of the internal organs which advancing age produces, and also with the changes which they undergo both in structure and function. Dr. Day is well aware of this, and notices these points at some length, as they affect, 1st, the respiratory system; 2nd, the nervous system; 3rd, the digestive organs; and, 4th, the organs of circulation. The modification in the respiratory organs and their functions he describes as follows:—

"The osseous case enclosing the lungs and heart is usually altered in form. Its upper portion is flattened at the sides, causing a well-marked diminution of the transverse diameter. The vertical diameter is shortened in consequence of the diminished height of the intervertebral cartilages, and as the anterior portion of the cartilages is most rapidly absorbed, we have forward curvature of the spinal column, as a further cause tending, in conjunction with the others, to lessen the capacity of the chest. The intercostal spaces lessen in size, till contiguous ribs come in contact with one another, and the cases are not rare in which, in extreme age, they are found actually united.

"The ribs diminish in density, and lose their elasticity, and the cartilages of the two first are usually ossified. Union of the chondro-sternal articulations is not very common, and the joints uniting the ribs with the spine generally preserve their mobility. The inferior boundary of the thoracic cavity,—the diaphragm,—is naturally altered in form, in consequence of the preceding changes. We find it thrown in folds, the impressions of which are often well marked on the upper surface of the liver.

"The lungs of aged persons vary considerably in their aspect. These varieties have been comprehended by Hourmann and Dechambre in three typical forms, by which one lung may differ from another, or parts of the same lung from other parts. I have slightly modified their views in a few points.

"*First Type.*—In muscular persons, with well-formed thorax, not very much altered by the ravages of age, the lungs present little apparent difference from those of the adult, except in the altered position of the great interlobular fissure. The degree of this alteration corresponds with the extent of lateral flattening. In the adult this fissure lies immediately beneath the upper lobe, and passes obliquely to the root of the lungs, so that on the right side the central lobe occupies exactly the middle part, and on the left side has the lower lobe immediately beneath it. But in old age the fissure approximates to the vertical direction, so that one lobe of the left lung is directly in front, and the other behind, and the middle lobe of the right lung projects downwards, and the lower lobe becomes elevated behind it, so as to form the posterior fourth (or more) of the summit of the organ. On examining a thin dried section under the

microscope, the cells are found to be about double the size observed in a similar section of an adult lung.

"*Second Type.*—The lungs are of regular form, but small, light, and hardly capable of being distended sufficiently to fit the thorax, even by the strongest inflation, and when thus inflated, the air escapes more readily than from the adult lung. On pressing them between the fingers, the ordinary crepitation is entirely, or for the most part, absent. They are bathed in a clear serous fluid. The cells, on examining a dried section, are found to be larger than in the preceding type, and there is an obvious diminution of the fine vascular tissue that is so apparent in the adult lung.

"*Third Type.*—The lungs lie closely attached to the vertebral column, and form an irregular mass surrounded by much serous fluid. They are livid and flabby, and their normal conical form is no longer recognizable, the summit being often larger than the base. The fissures have sometimes apparently disappeared, and the lobes are merely united by a flat, thin pedicle. Inflation does not much increase their size. They are very light, and communicate to the touch the sensation of a skein of flax. In this case the microscope exhibits cells of a highly irregular form, but of larger dimensions than in the preceding types. Very few vessels are perceptible.

"These facts verify the law announced by Magendie, that the density of the lungs diminishes, as also does the quantity of blood they admit, with the progress of age. The thorax gradually accommodates itself to this change; it becomes atrophied as the lungs atrophy; it contracts as they contract. The effusion of serum may be owing, at least in part, to the chest being unable to contract beyond a certain point, so that, as the lungs diminish, the serum may fill the vacant space.

"There is yet another point to be noticed in connexion with the lungs of aged persons, namely, the black deposit which is frequently found in the respiratory organs. It seems due to the stagnation of the blood in the pulmonary tissues. When it occurs in great abundance it is capable of producing considerable inconvenience by obstructing the capillary vessels and respiratory canals. The absorbents diminish with the advance of old age. The fibrous tissue of the bronchial tubes not unfrequently becomes hypertrophied, and thus lessens their capacity; and their contraction is often much increased by chalky deposits in the sub-mucous tissue, by thickening of the mucous membrane from repeated inflammations, and from various other causes. Ossification of the thyroid and crycoid cartilages, and of the rings of the trachea and bronchi, presents an additional obstacle to the free entrance of air.

"Let us now consider the modifications in the functions of these organs consequent on the above changes.

"As the respiratory organs become worn out, the necessity for employing them seems to diminish in a corresponding degree. The movements of the chest, especially in the transverse direction, are much diminished, and become irregular both in number and in

duration. The diaphragm becomes the chief agent in inspiration. The scaleni and sternocleido-mastoidei muscles are rendered almost useless when the spine is much curved; and to remedy this, the head is thrown back at each inspiration, so as to put these muscles to the stretch. Ordinary expiration is sudden and rapid; forced expiration, as in coughing and expectorating, is difficult when there is much curvature, in consequence of the relaxed condition of the recti, obliqui, and transversales muscles. From the examination of 255 women, ranging in age from sixty to ninety-six years, Messrs. Hourmann and Dechambre found that the number of respirations in a minute averaged twenty-two.

"The diminution in the expansive power of the lungs and in the extent of exposed mucous membrane, and the decrease of the vascular tissue, sufficiently indicate that the changes produced in the blood while passing through the lungs must be very different from those occurring in the adult. The change from venous to arterial blood cannot be efficiently brought about. The circulating fluid leaves the lungs with the impress of venosity still adhering to it. The carbon, which ought to be eliminated by the lungs as carbonic acid, is only imperfectly removed, and the corresponding volume of oxygen which ought to be absorbed in its place, and conveyed in the blood to every cell within the organism, carrying with it health and vigour, can no longer gain admittance into the system.

"Moreover, the altered state of the vascular tissue and of the bronchial mucous membrane presents an obstacle to the free escape of the aqueous vapour charged with organic matter, which is usually evolved from the pulmonary organs. In consequence of this retention the lungs have a tendency to become œdematous, and the depositions so frequently found in the lungs of the aged are probably, in some measure, dependent on the same cause. That the character of the pulmonary excreta also varies is obvious from the fetid odour of the breath, not unfrequently noticed. If the urinary secretion is checked, the breath often has an ammoniacal smell."—pp. 6–11.

In connexion with the functions of the nervous system, Dr. Day notices a point often overlooked by the physician in his diagnosis as to the amount of disease present in any organ, namely, *the insulation of the different organs* which exists in old age. If, for example, we judge of the extent to which a lung may be diseased by the condition of the heart's action, so important a diagnostic aid in youth and adult life, we shall be often very much deceived, for in old age the great systems of life seem to act to a great extent independently of each other, or, as the author terms it, are *insulated:* thus one of the lungs may be so extensively diseased as to be almost perfectly useless for the discharge of the function of respiration, and yet the heart give little indication of the obstruction necessarily

thrown thereby on the circulation of the blood. The increased difficulty in diagnosing accurately the diseases of advanced life, caused by this peculiarity of the nervous system, is apparent, and, taught by it, the physician should be especially cautious in his prognosis, in all affections of the aged, when a vital organ is engaged. The young practitioner, unaware of this fact, on which so much stress is correctly laid in Dr. Day's volume, is often surprised at the suddenness of death in old persons affected with what the ordinary symptoms lead him to believe a trifling affection, and still more so with the extent of disease which a *post mortem* examination reveals in such cases, and which during life he did not detect. The author quotes the following apposite remark of Prus on this point: "Enter a ward devoted to the treatment of the diseases of old age, and you will be struck with the thorough indifference with which a patient sees his neighbours die around him: so it is with the economy of old age; the body is destroyed piece-meal without any general reaction, without the appearance of conservative effort."

The want of agreement between the pulse felt at the wrist and the action of the heart, is judiciously pointed out, and the useful rule laid down, that, in the diseases of old people, "*the pulse should be counted at the heart.*" Dr. Day here notices a mistake made by most physiologists in regarding it as an established fact, that the number of the heart's pulsations diminishes in advanced life. From the data afforded by 562 healthy women, whose mean age was seventy-three years, he ascertained that the average number of pulsations in them was a fraction above 79 in a minute; and that the average pulse of 197 healthy men, of the mean age of sixty-eight years, was 72·5. He concludes from this, that individuals with very slow pulse in old age are exceptional cases. Our own experience furnishes us with many instances of quick pulse in old persons; thus, in one lady aged nearly 70, at present under our care, the pulse is seldom below 80 in the minute in her best health, although she exhibits no evidence of diseased heart; but, were we to speak in general terms, we should say a slow pulse is more common than a quick one in advanced life. There is another point connected with the pulse in the aged, which Dr. Day has omitted to mention, and which is of much practical importance, namely, that change of posture has much less effect on the pulse in advanced life than in youth or adult age; such, at least, is our experience, and we think it would be well to test its truth experimentally on a large scale.

The precepts for the preservation of health in declining life,

as given in the second chapter, are most valuable. Every point is ably treated, and the most trifling not neglected; the habits, time for meals, choice of food and drinks, clothing, all receive a due amount of consideration; and rules of the utmost importance for the aged who wish to preserve a *mens sana in corpore sano* laid down. The sleeplessness from which old persons occasionally suffer so much is fully noticed, and the author's experience of chloroform in its treatment, which he had not sufficiently tried when the body of the work was going through the press, is given in an introductory note. He speaks most highly of its effects, having arrived at the conclusion that "there is no age at which chloroform may not be given with perfect safety with the view of procuring sleep." Dr. Day lays especial stress on the necessity of guarding against atmospheric vicissitudes, in old age, by warm clothing; and seems to think that there is much truth in the opinion of the ancients as to the possibility of the aged prolonging life by sleeping with young persons:

"Old persons commonly suffer very much from the cold during the night. They should be thoroughly warm on going to bed, and in cold weather should sleep with their feet resting upon a stone or tin bottle filled with hot water, and thickly enveloped in flannel. There is, I believe, no measure so influential in supporting the sinking vital energies of age as the communication of animal heat, particularly from the young of our own species. This is one of the oldest(*a*) restorative means of treatment practised, having been adopted by King David when he 'was old and stricken in years; and they covered him with clothes, but he gat no heat.' Boerhaave caused an old burgomaster at Amsterdam to sleep between two young persons, and we are informed that the old man acquired, by this means, a visible increase of vigour and activity."—pp. 35–36.

The third chapter is fraught with instruction to the unskilled in the ailments of the aged, as to the general principles

(*a*) "The following inscription discovered at Rome, in the seventeenth century, seems to allude to this subject.

Æsculapio et Sanita
L. Clodius Hermippus,
Qui vixit annos cxv. dies v.
Puellarum anhelitu.
Quod etiam post mortem ejus
Non parum mirantur physici
Jam posteri, sic vitam ducite.

This inscription gave rise to a very singular work by Dr. Cohausen, entitled, "*Der wiederlebende Hermippus, oder physikal. u. med. Abhand. von der seltsamen Art sein Leben durch das Anhauchen junger Mädchen auf* 115 *Jahre zu verlängern.* 1753."

in their treatment; the difference of sex in relation to disease, and the want of reaction in all morbid affections of advanced life, are adverted to. The effects of loss of blood on the old are specially noticed, and due caution recommended in the use of either general or local bleeding; we fully agree with Dr. Day that "it is a measure that must be adopted with extreme caution and comparative limitation." We feel happy, however, to think that the present school of physicians, warned by the ill consequences which ensued from the promulgation of Broussais' doctrines, so freely adopted for some time, require not to be told of the dangerous results of indiscriminate bloodletting at any period of life, least of all when nature's decay requires the *pabulum vitæ* not to be diminished.

Climacteric disease is treated of in the fourth chapter. The term climacteric, originally applied by the Greek physicians to designate the five epochs of life, is now applied solely to the changes which occur about the sixty-third and eighty-first years, and which were called by them the grand climacterics. These may be, as mentioned by Dr. Day, either of renovation or decay. There is one example adduced by the author as a proof of the former, namely, those cases in which old persons recover their powers of vision so far as to be able to lay aside the use of spectacles; but this fact, although frequently quoted by writers as an evidence of renovation of constitution, —we have heard it lately mentioned as such with respect to the Duke of Wellington,—is but one of the effects of old age; the projecting cornea, on which the near-sightedness of old age so generally depends, becomes flattened by the absorption gradually going forward, which accompanies the farther advance of life.

In the fifth chapter is shortly described senile marasmus or wasting, its symptoms and treatment; and in the sixth, the author's deductions from the tables of the Registrar-General of England, on the diseases most fatal to persons in advanced life, are given. The conclusions arrived at are, that of 1000 persons dying at and after 60, 285·3 die of old age, 237·5 of diseases of the respiratory organs, 130·9 of diseases of the nervous system, 59·2 of diseases of the digestive system, 53·5 of diseases of the circulatory system, 20·3 of diarrhœa, 14·2 of influenza, 7·8 of erysipelas, and 191.3 of other diseases, as typhus, dropsy, diseases of the urinary organs, cholera, dysentery, cancer, gout, rheumatism, &c.

Diseases of the respiratory organs, then, as might *a priori* be supposed in the changeable climate of England, are more than doubly as fatal to old persons than those of any other of

the great systems; and from the detailed tables of Dr. Day, it appears that exactly one-third of those dying from affections of the lungs are carried off by bronchitis. We, however, agree with him in thinking that pneumonia is present in a great proportion of those said to die of bronchitis; and it must be remembered that the tables of the Registrar-General, so far as regards the exact cause of death, can only be looked upon as approximations to the truth.

The remaining chapters of Dr. Day's volume are devoted to the special consideration of the most common diseases from which old persons suffer, and to an elucidation of the specialties in their diagnosis and treatment as contrasted with similar affections occurring in earlier life. Diseases of the lungs, as shown to be the most important, are first considered, and practically illustrated in a series of instructive essays, forming the various sections of the seventh chapter. Influenza is described chiefly from the author's experience of the late epidemic, fully noticed in our review of Dr. Peacock's work, in a late Number(*a*). The author's remarks on its treatment are, we think, too concise, and he does not seem to be aware of the practice we so strongly recommended in that review, of administering at the very commencement a strong opiate, with the view of cutting short the disease; we have seen it effective in even the very aged.

Diseases of the nervous system affecting the aged are next concisely noticed, there being but little peculiarity in them as regards their occurrence in advanced life. The ninth chapter presents an admirable *resumé* of the ailments of the digestive organs from which old persons so uniformly suffer, especially functional derangements of the stomach and intestinal canal. We cannot forbear quoting from the third section of this chapter the following excellent remarks on senile jaundice:

"There is a peculiar form of jaundice, to which old persons are subject, and which has consequently received the name of *icterus senilis*, or *senile jaundice.* It is preceded for some weeks, or even for months, by a feeling of pressure and general uneasiness in the pit of the stomach, often amounting to actual pain, and most perceptible a few (two to four) hours after taking food. In some cases shooting pains are felt, extending from the stomach to the right hypochondrium, during the whole process of digestion. The skin in the mean time presents nothing more than a cachectic appearance, which is however gradually replaced by a true jaundiced tint.

(*a*) Vol. vii. p. 433.

The above symptoms at first intermit, leaving the patient in a state of comparative health for some weeks; the intermissions, however, gradually become shorter, and at last altogether disappear. The skin finally presents a dull blackish green tint. The urine is dark from the presence of bile-pigment, and deposits a copious sediment. The state of the intestinal excretions varies considerably; there may be extreme constipation, or there may be greyish clay-like motions, or finally these last may be intermixed with black, pitch-like bile. The pulse is very slow. The patient complains of a dull aching pain under the false ribs of the right side, which is increased by a deep inspiration. A careful manual examination will frequently detect a hardness or tumour, the exact seat or nature of which it is often difficult to ascertain. It may be situated in the liver, the pancreas, the spleen, or the omentum. There is a gradual loss of appetite, accompanied with nausea, and often with vomiting; the patient wastes away, hectic fever is set up, the feet and abdomen become dropsical, and the emaciation finally becomes extreme. During the last stage of the disease, we frequently find that nothing can be retained on the stomach, and the peculiar matter resembling coffee-grounds is vomited, which we may regard as affording pretty certain evidence that there is organic disease of the liver, gall-bladder, pancreas, or stomach. Death ensues from exhaustion, with convulsions and delirium, or from coma.

"It will be seen that I have thus classed, in a single category, all forms of jaundice depending on structural changes. The symptoms in all cases are pretty much the same, and I fear we must add that, generally speaking, the treatment is alike unavailing. While gall-stones are most common in the female sex, men are most frequently the subject of the present disease. It is most common in old spirit-drinkers, in hypochondriacs, and in those who have been liable to attacks of gout or of hæmorrhoids; in fact, it seems closely connected with a plethoric and torpid condition of the portal circulation. A sedentary mode of living, the use of unwholesome and indigestible food, constipation, the suppression of natural or artificial discharges, and, above all, the perpetual struggle for mere existence, to which thousands in this metropolis are subjected, are amongst the principal causes favouring this disease.

"The course of this disease, or, more correctly speaking, of the diseases on which this symptom depends, is very slow. The patient may live for years, the pain in the hepatic region usually increasing. A perfect restoration to health is only possible where the jaundice depends on the impaction of a concretion, or on the pressure dependent on an accumulation of hardened fæces. Most of these cases terminate in dropsy and hectic fever, a few in apoplexy, and fewer still in intestinal hæmorrhage.

"The treatment is seldom more than palliative, for the structural changes giving rise to the jaundice are usually beyond the resources of our art. Much may be done, in some cases, by a judicious regulation of the diet, and the regular administration of mild

laxatives and anodynes. Diet-drinks, containing taraxacum, burdock, or sarsaparilla, combined with muriate of ammonia, liquor potassæ, or small doses of bichloride of mercury, have checked the progress of the disease for a time. The free inunction of iodide of lead ointment may be associated with the above internal remedies." —pp. 217–221.

Chapter X. contains a description of the diseases of the heart, and Chapter XI. of diseases of the urinary organs, both most important in certain peculiarities, as they affect the aged. Dr. Day's observations on them are highly practical, and deserve to be carefully perused.

Diseases of the skin, ulcers of the legs, senile gangrene, and gout and rheumatism, form the subjects of the twelfth and thirteenth chapters; and the volume concludes with an appendix, in which is given an account of the thermic treatment of lumbago and other forms of chronic muscular rheumatism, sciatica, and other forms of neuralgia, paralysis, &c., with the author's experience of its efficacy in these various affections when they occur in old persons.

On Gout, its History, its Causes, and its Cure. By WILLIAM GAIRDNER, M. D. London. 1849. pp. 232.

THE author informs us in the preface, that, in writing the history of gout, he has, in the work under review, confined himself to the pure type of the disease, in which its real nature is best seen; it is therefore intentionally that no reference is made to its complications with rheumatism, hypochondriasis, and insanity, these subjects, although highly interesting, being so very extensive as, if introduced, to swell the work far beyond the limits within which he desired to confine the present one.

When alluding to the obscurity and great frequency of gout, Dr. Gairdner explains his reasons for publishing the present volume; he says:

"Not any of the diseases to which man is liable is a cause of greater perplexity and disappointment than gout; yet this does not arise from the oft-repeated reproach of its intractable nature; it may indeed be said with truth that it is more curable than many, and that it is certainly more amenable to relief than most diseases which fall under the cognizance of physicians. The regular attack of gout cannot be said to give more embarrassment to a medical attendant than the assaults of any other malady, and inasmuch as they are, for the most part, quite exempt from danger, they give little solicitude for the event; but it is quite otherwise with its irregular

forms. In the beginning of a physician's practice, especially while he is as yet unfamiliar with any but the noted and typical forms of disease, the changing and mysterious phenomena of gout, and particularly its complications with other disturbances of the system or injuries of parts, are full of doubt and difficulty. In the earliest years of my professional life, my mind was frequently called to its consideration, to the observation of its various forms, the unravelling of its strange and confusing associations with other known forms of disease, and meditation on its cause and nature. I well remember how often I was perplexed by its obscure indications, how often I was surprised to discover it lurking unsuspected in the system, disturbing the healthy functions, and how much I was puzzled by seeing the symptoms of other diseases swayed from their natural and ordinary course in consequence of the intermixture of gout."

"I have hailed with great interest the works which have occasionally proceeded from some of our ablest physicians during my time, and particularly some writings which have within these few years issued from the press; but though I have found much matter of instruction in them, I have been mortified not to discover certain observations and thoughts of my own reflected in the minds of my colleagues. Recollecting that my own opinions had undergone great changes, I have been led to further inquiry, and although on certain points I may feel doubts strengthened, there are others on which re-examination and reflection only bring additional conviction. What these are will sufficiently appear in the following pages. Whether my interpretations are true or not, my contemporaries must judge; but believing that it may be of use to promulgate opinions earnestly and honestly formed, not so much from reading as from observation and meditation, I venture, with diffidence indeed, to add another volume to the many already written on the subject."

The book is divided into eleven chapters, the three first being occupied by a consideration of the frequency, history, varieties, sequelæ, and terminations of gout. Dr. Gairdner gives a very faithful description of the regular and atonic gout, the former of which, for convenience sake, he divides into three stages, marking its nature by the effect on the constitution, and guiding our practice by an accurate appreciation of the inroad it has made on the constitution.

The fourth chapter treats of the different theories of gout, morbific matter, indigestion, and uric acid diathesis. With regard to the term morbific matter, our author says that—

"In describing this disease we are almost irresistibly led to employ a figurative and somewhat poetical language; its phenomena readily adopt themselves to the metaphor of a surging mass, a coction, or a wanderiug vapour."

But he conceives it a violation of all the best rules of philosophy to explain obscure phenomena by means of an assumed principle, or fact of, at least, doubtful existence; and although several physicians of eminence of our own day have openly expressed their belief in a *materies morbi*, yet he says it is undoubtedly true that this easy and profitless explanation finds little countenance from physicians in general:

"Another opinion, however, prevails, which, though it leads to a sounder mode of treatment, seems to me to involve hardly less of error. The very frequent accompaniment of symptoms of indigestion has led to this theory by a natural and strong impulse. But if it be considered how often the disease exists in its several forms, with little, if any, sign of dyspepsia, and that in its first invasion, when the real nature of the complaint may be supposed to be most clearly indicated, and its accidental complications to be least manifest, the signs of depraved digestion are nearly always absent, it must be admitted that some other cause should be sought for. It is, indeed, proverbial that the first attack of gout is attributed to a sprain, because it supervenes in the midst of the rudest and most perfect health."

A very experienced physician once told the author that he was generally "taken in by the first attacks of gout, not being able to make up his mind to pronounce in favour of so formidable a disease on the evidence of one symptom in the midst of such perfect health." On the other hand, he has met physicians who had gout so constantly before their mind, that they were ready to suspect the presence of the disease in all circumstances, and who, in fact, were like the celebrated surgeon who discovered a syphilitic taint in every obscure case brought to him, and who would not admit, in favour of his patient, the fact that he had not been exposed to infection: "If it was not you, it was your father, and, if he was not guilty, your grandfather was."

The author conceives that all that has been proved with regard to indigestion amounts to this: that it is the most constantly attending symptom of gout, and that from a consequence and satellite it may easily be erected into a cause. When considering the subject of the uric acid diathesis, Dr. Gairdner says:

"One of the most remarkable results of arthritic indigestion is the presence of acid in nearly all of the excretions of the body; this has of late years been called the *uric acid diathesis*. The adoption of such a term would imply a conclusion, to which I am by no means prepared to assent. By a diathesis I understand a condition of the constitution, and not a simple affection of certain fluids of the body.

Dr. Garrod has lately much extended our knowledge by a very interesting proof of the existence of uric acid in the blood."

And the facts of Wollaston having previously found out the existence of uric acid in the joints, Landerer in a concretion between the coats of the aorta, and its being discovered in several of the fluids of the body in a state of disease, does not, our author thinks, justify us in the use of the expression; and he is of opinion that the uric acid, as a cause of gout, meets with a fatal difficulty from the fact, that urates in the urine are common to gout with many other diseases: ordinary indigestion, from whatever cause, or a slight and ephemeral fever, will cause this appearance. After alluding to the valuable researches of Dr. Garrod with respect to the presence of uric acid in the blood, our author proceeds to the fifth chapter, in which he treats of the formation and relations of urea and uric acid; and the conclusion that he arrives at with respect to the relations of these substances, after a series of analytical examinations of the urine in gouty patients, which are given in detail, is:

"That both urea and uric acid are formed from the blood during the processes of assimilation and oxygenation. When this latter process is perfect the uric acid nearly disappears, but if circumstances occur which interfere with the due arterialization of the blood, the immediate consequence is the appearance of uric acid in the urine. It is probable that the elements of the urea and uric acid are partly derived from the disintegration of the tissues; but it would be difficult to account for the great varieties which occur in man in health and disease, and in all animals in the normal state, without supposing that the food much influences their urinary secretions. I have no doubt that many physicians will think these ideas are pursued too far in a work on practical medicine, and that chemistry can hardly yet be called on to solve questions so intricate. They cannot require more prudence in the application of chemistry to the uses of medical science than I am disposed to incultate, and I should place little reliance on these results did they not meet with confirmation from the other facts of this disease, but when we meet with an occurrence in the chemical history and pathology of gout, and the same explanation of what would be otherwise doubtful, I am encouraged to adopt them without hesitation. I trust that I have convinced my readers, as well as satisfied myself, that in gout we have not merely an increase of urates in the excretions, but an altered relation of the urea and uric acid, and that this change takes place in the early assimilation of the food, during the process of respiration. These facts throw much light on the pathology of the disease, and they are so distinctly applicable to treatment that I trust even those physicians who deprecate the great freedom with which speculations of chemistry have sometimes been used to bolster up fancies in physic,

will excuse the length and minuteness of the details into which I have entered."

We must here introduce the following passage from the introduction to the work:

"The opinions I have expressed concerning urinary deposits are at variance with some which prevail, but I have been at much pains to be accurate, and I have reflected carefully before venturing to claim public attention to them; the subject is speculative, although resting on observation. The facts related should be confirmed by others, and the experiments repeated by other hands. I trust the whole subject will pass through this ordeal; if I am in error I shall freely and candidly withdraw what I have advanced; if my opinion meet with the assent of my profession I shall be glad to have added to our knowledge of a difficult subject."

Dr. Gairdner does not consider inflammation essential to gout, but refers its origin to plethora from visceral obstruction, on which subjects he explains his views at length in the seventh chapter.

The ninth chapter is devoted to the curability of gout, together with rules as to diet, exercise, &c., to be pursued in infancy and youth, with the view of counteracting the hereditary disposition to gout, and is replete with judicious directions on these all-important subjects.

In the concluding chapters our author enters at length into the treatment of the regular and irregular forms of gout. With respect to blood-letting in regular gout, Dr. Gairdner is, in common with other judicious physicians, much opposed to even ordinary bleedings, unless there be inflammation of some important internal organ, but he says that,

"Rejecting altogether the opinion that gout is in any degree of an inflammatory nature, and believing that such a blood-letting as is necessary to subdue any of the phlegmasiæ is most injurious, it does not follow that this remedy may not be employed in such measure and with such precautions as will surely avoid the above great and recognised evils, and yet give that relief to an overloaded heart and vessels which the symptoms of the disease point out as required."

Our author further on states his conviction that the use of small bleedings is hardly understood by us, and that the late Dr. Parry, of Bath, as far as he knows, was the only physician who made use of them. Our author conceives that small bleedings, instead of debilitating, may be ranked as tonics, on account of the cheerfulness, energy, and sense of power they suddenly restore to persons oppressed by a state of plethora; and they,

according to him, supplant at the same time the necessity of purgatives, which are very often noxious in gout, and attended with considerable risk. He says that it may seem absurd to open a vein in order to abstract from three to six ounces of blood, but affirms that they will not say so who will make a trial of it.

With regard to small bleedings in cases of regular gout, we are of opinion that at this side of the Channel at least there are few cases uncomplicated with inflammation of some internal organ, in which we would consider ourselves justified in having recourse to general blood-letting, even to the small extent recommended by Dr. Gairdner, knowing from experience that the paroxysm can be brought to a happy termination, in general, by milder modes of treatment; and we therefore cannot agree with Dr. Gairdner that it is unfortunate that the prejudices of our patients very often oppose themselves to its use.

Dr. Gairdner says:

"I have repeatedly used this remedy with the happiest consequences, in the case of men who were affected with symptoms of incipient gout in the midst of the heaviest occupations of life. I was once sent for to see a gentleman who, at the time of his seizure, had given notice to bring forward great public business in Parliament. He had been bled before in similar circumstances, but had suffered so much afterwards that he was very averse to return to the use of the same remedy; but he was a person of very dispassionate judgment, and not wholly unacquainted with medicine. On hearing my explanation, he consented to lose four ounces of blood. This small quantity was quite sufficient to relieve the system; he made his speech with great facility, and told me two years afterwards that he had not for ten years previously enjoyed such uninterrupted good health. I ought, however, to add that he was a person who could place restraint upon his desires."

Dr. Gairdner, however, never makes use of this remedy in cases of gout in an impaired or defective constitution, to which he considers it wholly inapplicable, believing, as he does, that some considerable degree of vigour is necessary for its legitimate use, which he conceives is generally met with in the early stages of regular gout.

With regard to the use of colchicum in regular gout, Dr. Gairdner is of opinion that its character as a specific is quite established, and we look on his observations as to the mode of administering it as of great importance. He considers that the most common reason for its failure is the unnecessarily large dose in which it is frequently ordered. He recommends it in doses varying from ten to fifteen minims, and that not until the first severe

symptoms of the disease had been subdued; and he says that he finds, if there be sufficient vigour of constitution to permit the practice of a small bleeding, that colchicum may be used much sooner, and its administration attended with happier results. Our author does not coincide with Dr. Christison, who declares that he never saw the benefit of colchicum conferred till it had produced griping, purging, or some disturbance of the *primæ viæ*. According to Dr. Gairdner's opinion, colchicum never more effectually relieves the patient than when it acts silently and peacefully, without producing any evacuation whatever, or in any way disturbing the patient's comfort and ease. Its *modus operandi* he, with others, considers anything but involved in mystery, Dr. Douglas Maclagan, Professor Chelius, and Dr. Lewins, having demonstrated that it causes a more copious discharge of urea from the system; and he has found, by repeated investigations, that the increase of urea was attended by a great diminution of the urates in the urine: and he states that the opinion he has expressed in another part of the work receives confirmation here, viz., that urea and uric acid are again found to be correlative and vicarious substances. Further on, Dr. Gairdner says:

"When I consider how much gout is influenced by the condition of the nervous system, and that the most notable effect of colchicum, whether acting as a remedy or as a poison, is that of a narcotic, and when I further consider the great rapidity of its action, it appears to me probable that the nervous system will be found to be the principal channel through which this medicine exercises its powers."

This chapter, together with the concluding one on the treatment of irregular or metastatic gout, contains a great deal of useful practical information. Dr. Gairdner has evidently devoted considerable attention to the subject of gout, and has taken advantage of an extensive opportunity of becoming thoroughly acquainted with the disease. It is on this account that we have quoted him at such length, and we cordially recommend a perusal of the book itself.

A Remonstrance with the Lord Chief Baron, touching the Case Nottidge v. *Ripley.* By JOHN CONOLLY, M. D., Physician to the Middlesex Lunatic Asylum at Hanwell. 8vo. Second Edition, pp. 19. London, Churchill. 1849.

A Letter to the Right Hon. Lord Ashley, relative to the Case Nottidge v. *Ripley.* By T. T. WINGETT, M. D., Medical Superintendent of the Dundee Royal Lunatic Asylum. 8vo. pp. 16. Dundee, Chalmers. 1849.

The Journal of Psychological Medicine and Mental Pathology. Edited by FORBES WINSLOW, M. D. No. VIII. October, 1849. London, Churchill.

FEW cases have ever come before the medico-legal world of such interest as the recent one of Nottidge *v.* Ripley. Generally the interest taken by the public in lunacy questions is derived from the wealth or importance of the lunatic; in this case it is altogether dependent upon the momentous questions which have arisen during the course and since the termination of the trial, as to what shall be the test for the future of the propriety of confinement in a given case of madness. The debate, we repeat, is not whether such and such constitutes insanity, but whether such and such constitutes *sufficient* insanity to render confinement necessary.

The facts of this case are simply these:—Miss Nottidge, the plaintiff, is the eldest daughter of a widow lady of fortune, residing in the country. Three other daughters, each having £6000 at her absolute control, have been, under the influence "of their religious feelings, and perhaps a natural tenderness of nature," subjected to the influence of a certain curate named Prince, one of the English clergy, who is accused of having deluded this imbecile maiden lady. This person has three followers of his own sex, who speedily become, as Dr. Conolly says, "the extemporaneous husbands" of these three ladies. They betake themselves to a place in Somersetshire, called the Agapemone, or Abode of Love, whereof Mr. Prince is the head. The three husbands immediately obtain possession of the £18,000, or, in other words, of the sole property of their deluded wives. Miss Nottidge accompanies her sisters to the Agapemone, but, after a short time, returns home disgusted. Believing it to be the will of God, that is, of the god of the Agapemone, she returns, her place of residence not being communicated to her mother.

It is now determined that she shall be put under the protection of a lunatic asylum; she all the time, "with a faith surpassing the faith of her sisters, declaring that Mr. Prince is the Almighty." She is placed under the charge of Dr. Stilwell, of the Moorcroft House Asylum, at Hillingdon; but at the end of seventeen months she is liberated by order of the Commissioners, owing to the impairment of her health from confinement. We must add, that her original delusions still existed in full force, and that the Commissioners, including the late lamented Dr. Prichard, were unanimous in the opinion that she was *insane*, and a proper object for confinement in a lunatic asylum. The result of the liberation was the action against Ripley, her brother-in-law, to recover compensation in damages for incarceration in the asylum. A verdict was obtained in her favour, the Lord Chief Baron directing the jury that if the evidence did not prove that the plaintiff "was dangerous to herself or to others," she was entitled to damages. In his charge, the Judge made many observations involving important considerations, which want of space, and the fact of their being already ably commented upon in the recent letter of the Commissioners in Lunacy to the Lord Chancellor, prevent us more fully entering upon. But there is one remark made by the learned Judge, which, though interwoven amid a tissue of error, peculiarly calls for animadversion. He is reported to have stated that his own idea of toleration was, that all those who entertained with sincerity any peculiar doctrine, however absurd that doctrine might appear to others to be, ought to be allowed to enjoy that opinion without interference, so long as the principles and the acts they adopted were not forced offensively, or contrary to law, upon the public notice, or against the public morals. Well does Dr. Conolly observe, with obvious reference to this part of the charge to the jury, that no suspicion seems ever to have flitted across the bench that this Abode-of-love god, who signs himself Amen, and has destroyed prayer for ever, and hastened the coming of the kingdom of heaven, and placed the game of hockey among the immortal recreations of ladies and gentlemen, ever extended his power beyond the securing of their property, or that there may be places where a mock religion and a boundless fanaticism sanction modes of worship which tend to destroy all sense of modesty. But a still weightier objection lies to the remark of the Lord Chief Baron. A distinction must, for the obvious reasons, be made between an abstract belief in a doctrine, such, for example, as that the Day of Judgment is past, and the belief in a certain man being God, for such a belief as the

last is incompatible with the due performance of the social relations, and as the influence of the individual believed to be God must be in its very nature unlimited, all the ordinary defences of chastity, property, or life must be thrown down. An *imagined* command of God would as easily induce Miss Nottidge to murder her mother as to go to the Agapemone, —to destroy herself as to sacrifice her property. If the whole understanding be not engaged in such a delusion as this, and we firmly believe it to be a profound psychological blunder to say it is *not*, at any rate the unaffected part in such a *partial insanity* must be ever practically useless *quoad* moral control.

But infinitely the most important portion of the charge is the *dictum*, that the fact of being dangerous to himself or others is the test of the propriety of confinement. The whole profession have properly enough taken alarm at this astounding test, and Dr. Conolly has done battle with the learned Baron in a "Remonstrance" that will not be soon forgotten. He has convincingly proved that we must not wait for danger,—but prevent it; that lunatic asylums are for the protection, the comfort, the *cure* of those consigned to them; that they are hospitals for mental maladies, not gaols for savages. Is it possible that the Lord Chief Baron of England was ignorant of this?

We would especially commend to our readers the letter of the Commissioners to the Lord Chancellor, which they will find in the Number of the Journal of Psychological Medicine cited at the head of this article. They state that in the majority of cases they find little difficulty in satisfying themselves as to the state of mind of the patient; but cases of nicety occasionally arise, exhibiting such peculiarities, and differing so decidedly in some respects from all others, that the Commissioners in dealing with them have been unable to lay down any general rule or principle for their guidance. In no case have they decided that opinions, however wild or extravagant, which were common to any class or body of persons, either in reference to religious belief or otherwise, constituted or amounted to insanity. And in no case have they decided that a patient was insane because his symptoms resembled, in a greater or less degree, those of other patients whom they have previously known; *but they have considered each individual case as depending upon its own special circumstances, and have formed their judgment accordingly.* We have italicized this last sentence, because we think it contains a most valuable truth. Every day serves more and more to confirm our opinion that every case must be considered upon its own special merits, almost irrespective of the *dicta* of

physicians or lawyers. This opinion is by no means shaken by Dr. Conolly's "Remonstrance," who has been as successful in opposing the dangerous errors of the Judge, as he has been signally unfortunate in the expression of his own ideas upon the matter. Yet we must confess that this is owing more to the nature of the subject than to any fault on Dr. Conolly's part; for there are certain delicate questions, upon the confines of perilous extremes, which sustain injury in their very handling—cases, the practical management of which is as easy as the statement of the grounds of that management is difficult.

"There are men of rank," says the Doctor, "of minds so ill-regulated and unsound, that, if uncontrolled, they would be ever the associates of the lowest profligates, and frequent the vilest abodes of vice without shame; and women of wealth and station who will drink to excess, and expose themselves to every possible degradation. No one who is so unfortunate as to have in his own family, or among his acquaintance, any person manifesting any of the forms of perverted character above spoken of, will for a moment withhold assent from the opinion that all such persons require to be treated as insane."—p. 7.

It would be great comfort indeed to many a sorrowing family to be able to put into a lunatic asylum a lascivious daughter or an abandoned son, but we must enter our firm protest against the doctrine here stated so boldly, that such are *pro tanto* proper inmates of an asylum for lunatics. We have great pleasure in again bringing before our Irish readers the meritorious Journal to which we have just referred. Its price, the value of its original essays, and the general able manner in which it is edited, conspire to commend it to all lovers of the deeply interesting portions of Medical Science discussed in its pages. In the Number just issued, together with the letter of the Commissioners before referred to, will be found a good report of the trial and a very impartial review of the whole bearings of the case. Dr. Wingett's letter follows on the same side with Dr. Conolly, but its chief object is to show that the Conolly of the "Remonstrance" is not the Conolly of the "Indications of Insanity," and, on the ground of his having had good medical authority for his *dictum* in the very man who now remonstrates with him, attempts a certain sort of defence of the Chief Baron. When we consider that the Court had the Act of 8 & 9 Vict. c. 100, for its guide, and *not* the "Indications," which was published some time *before* that Act, and that no good would accrue to the profession by knowing that a great authority had changed his mind in the course of ten years, we look upon the letter of Dr. Wingett as unnecessary.

China and the Chinese, their Religion, Character, Customs, and Manufactures; the Evils arising from the Opium Trade, with a Glance at our religious, moral, political, and commercial Intercourse with the Country. By Henry Charles Sirr, M.A. 2 vols. 8vo. London, Orr and Co. 1849.

Voyages and works of travels, although not purely medical, are generally deserving of notice in a professional periodical, for the quantity of information they afford on some of the kindred or collateral sciences with which medicine is connected, as natural history, in its old and unlimited sense, botany, materia medica, and popular medicine, &c. It is for this reason that we have introduced "China and the Chinese," the work of our countryman, Mr. Sirr, to the attention of the readers of the Dublin Quarterly Journal. With the general bearing of the work we have but little to do; a large portion of it appeared in the Dublin University Magazine for the year 1846, and these chapters, with large additions, are now published in the two handsome volumes before us. Mr. Sirr has enjoyed ample opportunities of becoming acquainted with Chinese manners and customs, as far as it is possible to penetrate into the arcana of the Celestial Empire. He has used his eyes and looked abroad, and observed and scrutinized, and criticized, sometimes rather sharply, we must confess, upon all he saw and heard. The work contains abundance of information on a country to which we all now look so anxiously, as containing so many of our friends and companions, and concerning the diplomatic management of which by the English governors so much difference of opinion exists. Everything the traveller saw, within doors and without, men and manners, both of colonists and natives, soldiers and civilians, from a war-junk or a Joss-house to the button of a mandarin and the toilet of a lady, are told with an off-handedness, and in some places with a raciness of style that carries the reader along imperceptibly. From a portion of the title of the book we expected to have found some desperate *exposé* of "the evils arising from the opium trade." We at least anticipated finding several chapters exclusively devoted to the destruction of that, so-called, nefarious traffic; but, upon the whole, the owners of the opium clippers, and the cultivators of the *Papaver somniferum*, need not feel very wrathful at Mr. Sirr's tirade against their traffic. With the exception of a few *side wipes* as he passes along, he does not enter much into the subject of the opium trade. There is, however, a chapter devoted to

the knowledge of the healing art, which is worthy the attention of the medical reader, although many of the facts stated in it are already known to those who have examined the reports of the Medical Missionary Society, and those works in which Chinese medicine was treated more at length. But, independently of these circumstances, the readers of the Dublin Journal are not altogether unacquainted with the state of Chinese medicine, as in the twentieth and twenty-third Numbers of our former series were published two treatises, by Dr. W. Lockhart, long a resident in China, one upon midwifery, the other upon inoculation, the great bulk of the materials of both being translated from the Chinese.

"The climate of China is," says Mr. Sirr, "in no part of the empire, salubrious or adapted to the European constitution; but, of all parts of China, Hong-Kong is the most insalubrious, and the variability of the seasons and temperature are exceedingly injurious, and test the strength of the most robust constitutions. It would convey an inadequate idea of the rainy season, merely to speak of the torrents of rain; for the flood-gates of heaven appear to open, and pour forth torrents of water, apparently threatening the earth with a second deluge. The rainy season continues through the months of May, June, and occasionally July, and when these rains cease, miasmata arise, and the most unhealthy season of the year commences. The summer has been admitted, by all the Anglo-Indians whom we met in China, to be far hotter, and more fatally injurious to the constitution, than the hot months in India; and we have found continually the thermometer, standing in the shaded verandah of our dwelling, at 100°. The mortality which has prevailed among our troops, from the first landing in Hong-Kong, in 1840, up to this time, the end of 1848, will fully bear out the assertion; and, in despite of commodious barracks and *hospitals*, our poor fellows fall victims to the pestilential climate of Hong-Kong in a fearful manner. The winter is exceedingly cold and piercing, and a north-east wind blows, whilst a burning sun scorches the head, and the transition, from the burning heat of summer to the cutting blast of winter, injures the most robust. The intense heat of an almost vertical sun, whose rays are reflected by an arid rock, must necessarily prove injurious to health; but when this is combined with nights of piercing cold, when the thermometer falls below freezing point, and water freezes in the ewer placed in a bed-chamber, the effect upon a European constitution must be disastrous. In fact, the winter in China is FELT much more severely than in Russia, where the internal arrangements of the dwellings are such as to exclude all cold; in Russia, warm clothing will suffice to protect those who take exercise in the open air, which it will not do in China, for neither furs nor cloth will exclude the cutting north-east wind, which chills, and seems to penetrate the very *marrow of the bones.* Although, as before remarked, the climate of China is

in no part salubrious, yet the north is the most healthy portion of the empire; but fever and dysentery prevail through the whole land, and the sudden changes from heat to cold produce rheumatic fevers and catarrhs of a severe nature, which too frequently prove fatal.

"The scourge most dreaded in China is the fever termed the Hong-Kong fever, which has proved more fatal than cholera morbus; and at the time we now write, November, 1848, so terribly has this fever prevailed among our troops, and proved so fearfully fatal in its character, that our men were ordered to live on board ships moored in the harbour of Victoria, in the hope of arresting the progress of this scourge. A new symptom has developed itself in this disease, namely, that of an eruption, resembling the small-pox, accompanying the fever, and our most skilful medical officers are baffled in their endeavours to save the victim upon whom the harpy, Hong-Kong fever, has cast a withering glance. The temperate and intemperate become alike the victims of this dreadful fever, which generally commences with slight headach, gradually increasing until the whole head is so tender that no part can bear its own weight or pressure on the pillow without agony. The eye-balls are in such extreme pain, that light can be ill endured, yet the suffering produced by the closing of the eye-lids is intolerable; the frame becomes weak and enervated, and the patient finds himself unable to assume an erect posture, whilst the fever is raging to an incredible degree; the symptoms increase hourly, and the patient usually sinks under its violence about the third or fifth day. Hong-Kong fever has these peculiar features, that the patient will, apparently, become much better, and rally considerably a short time before death; instances have constantly occurred of the sufferer sitting up in bed, or, if allowed, rising from it, when suddenly delirium would become manifest, frequently in a violent degree, and if opposed injudiciously by force, the violence of the patient will increase, until he expires, apparently from exhaustion. In other cases, the patient, after rallying, will be seized with frightful convulsions, the features and eyes becoming distorted, fixed, and rigid, and after some hours of painful suffering (distressing in the greatest degree to the medical attendant, because his knowledge is insufficient to alleviate the agony he witnesses, or save the life of the patient), the stricken being will cease to breathe. If blood be taken from the arm at the commencement of the fever, the case is generally sure to terminate fatally. This fearful disease appears to have baffled all medical skill, for treatment which has proved successful in one case will be ineffectual if adopted in another; and medical men admit that medicine is of little service in this fever. All that can be done is to administer aperients, febrifuges, and apply cooling lotions to the head; local bleeding is also adopted, and beneficially, by the application of leeches to the burning temples. The patient should be kept in a horizontal position, with the head depressed; light nutriment should be constantly given, the utmost kindness,

and most soothing manner used, when delirum appears. A medical man can therefore do but little towards the recovery of his patient, and the only chance of recovery, humanly speaking, is from constant, careful, judicious, and tender nursing, which men can rarely receive in Hong-Kong or China, being generally left to the care of servants or male friends, unhabituated to act the part of nurses."—pp. 6–10.

"The returns to the Army Medical Department will show the fearful ravages from disease, made amongst our troops: the mortality has been, and is fivefold greater, *than has taken place in any other part of the world.* Military men and civilians, who have passed the greater part of their lives in India, have affirmed that they never witnessed, or heard of so much disease, in any part of British India, as they had beheld in Hong-Kong; and others who had fought many hard battles under India's scorching sun, and who had withstood an Indian climate for many years, with unimpaired health, have fallen victims, before our eyes, to the pestilential climate of Hong-Kong, which spares neither the temperate nor intemperate, young or old, strong man, youth, or feeble woman. Animals as well as human beings cannot endure the insalubrity of Hong-Kong: horses which are imported there from India, the Cape of Good Hope, or Australia, are frequently ill, and too often die; and the climate is peculiarly fatal to thorough-bred English dogs. A great favourite of ours, of a most valuable breed, which was brought from England, died in our house, after suffering great agony, exhibiting all the symptoms of Hong-Kong fever; and we have heard of many other dogs that were carried off by the same disease. The only living creatures which appear to defy the climate are vermin of all descriptions; these thrive and multiply to the ruin and destruction of every description of property. The cheerful note of a singing bird, desporting in the regions of air, in the full enjoyment of existence, is never heard in Hong-Kong, and their tuneful notes, except as imprisoned pets, never glad the ear."—pp. 14, 15.

There are some statements in the chapter devoted to the knowledge of the healing art among the native physicians which would amuse some of our medical readers. Among these we may mention the rather lengthy description of the mode of adjusting dislocations of the spine, an accident which appears to be more common in China, and, according to some accounts, attended with less danger, than in this country. Mr. Sirr affords us the following account of the practice of acupuncture:—

"When acupuncture was introduced into China, it is impossible to determine, but the operation has been practised from time immemorial, was introduced from thence into Japan and Corea, and

acupuncture is as much in vogue in the latter countries as in the former.

" The first correct information that Europeans received of acupuncture was in the year 1679, when Ten Rhyne, a medical officer in the East India Company's service, stated that a practice was prevalent in Japan, which was unknown to the Greeks, Romans, or Arabians. It appears that a Japanese soldier, who was appointed by the Emperor of Japan to conduct the English to the palace, was seized with vomiting and pain in the abdomen, after drinking iced-water. He took wine and ginger, but these remedies proving useless, he had recourse to acupuncture, in the presence of Ten Rhyne, popular belief being, that acupuncture allows a subtle and acrid vapour to escape, which was the cause of the suffering. The guard laid himself upon his back, placed the point of a needle on his abdomen, struck the head to make the instrument pass through the skin, then turned it round several times, until the needle had apparently penetrated to the depth of an inch, drew several deep inspirations, and withdrew the needle, pressing the puncture with his fingers, to force out the imaginary vapour. Ten Rhyne affirms that the soldier repeated this operation in his presence four times, when he declared that he was quite well, and perfectly free from pain.

" We have seen this remedy applied to one of our domestics in Hong-Kong, who had been suffering from neuralgic pains in the shoulder: acupuncture was applied to the part affected, two needles being left in his flesh for five days, and our servant declared himself greatly relieved by having holes drilled into his person. The use of the puncturing needles requires extreme caution, lest the operator should wound a blood-vessel; and to prevent unskilful practitioners from adopting this remedy, the following edict was promulgated in China. In the 297th section of the code we read, 'That whenever an unskilful practitioner, in administering medicine, or using the puncturing needles, proceeds contrary to the established forms, and thereby causes the death of a patient, the magistrate shall call in other practitioners, to examine the medicine, or the wound, and if it appear that the injury done was unintentional, the practitioner shall then be treated according to the statute for accidental homicides, and shall not be any longer allowed to practise medicine. But if designedly he depart from the established forms, and deceives in his attempt to cure the malady, in order to obtain property, then, according to its amount, he shall be treated as a thief; and if death ensue from his mal-practice, then, for having used medicine and practised his art with intent to kill, he shall be beheaded.'

" These instruments are used for the purposes of scarification and acupuncture, which is adopted most successfully in the treatment of tumours, to which the Chinese are especially liable. If the patient does not bear the operation of the needle, it is at once withdrawn, but if he does, and the disease proves obstinate, it is

introduced two, three, or more times. The more severe the affection, the deeper must be the puncture.

"There is one practice of the Chinese surgeons which entails too frequently severe suffering upon the patient, we allude to the application of powerful caustics: the sufferers have continually applied to our medical men for relief, cases presenting themselves where small sores originally, by the injudicious use of escharotics, have extended, until a portion of the tissue, and occasionally some important organ, has been either seriously injured or partially destroyed. One of the most powerful irritants used is called the *moxa*, or burning the flowers of the amaranthus upon the skin.

"Bleeding is seldom resorted to, but leeches and cupping are employed when local blood-taking is necessary; venesection is highly disapproved of in fevers, the Chinese practitioners arguing in this wise: 'A fever is like a cauldron boiling; it is requisite to reduce the fire, and not diminish the liquid in the vessel, if we wish to cure the patient."

We have given these extracts in order to interest our readers in works of travel, and to afford information on a subject of great importance at present to young medical men in particular.

In the seventh Number of the present Series of this Journal will be found a full review of Dr. Wise's commentary on the Hindu system of medicine, to which we would refer for a fair exposition of oriental medicine generally.

PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

MEDICAL MISCELLANY.

Letter from Dr. Tuthill Massy, *of Exeter, on the recent Epidemic of Fever in South Wales.*

Sir,—In reading your Report of the Irish fever, it occurred to me that it might not be uninteresting to your subscribers if I give them an outline of that fever as it came into South Wales. Imported into the collieries from the South of Ireland, and landing at Swansea and Cardiff, it made its way to Newport in Monmouth, with the ill-fed poor from Skibbereen, and the labouring classes from Cork, Cloyne, and Kinsale. A cargo of fifty, and now and then one hundred, would escape across the Channel in those open coal ships. On landing they advanced in groups to the relieving officer of the Newport Union, to get tickets for a night's lodging in the Refuge. From this unventilated retreat six, seven, or ten would be forwarded, on the following morning, to the temporary Fever Hospital; as many more issued from the crowded lodging-houses, sinks of sensuality, tottering with famine-fever: they likewise were admitted.

Morning after morning this scene went on, and evening after evening the grave was dug, and the poor wanderer was silently interred, unknown and unregretted.

It will be essential for me to state, that my introduction to this temporary Fever Hospital was through the coroner, William Brewer, Esq., a surgeon of considerable repute.

Half the patients in the hospital (forty) were allotted to me, the other half were under Mr. Hawkins; I had also the care of half the Union hospital, half the town of Newport, and all the poor in that once Roman city, Caerleon, and the district, including the peninsula as far as Goldcliff, bounded by the River Usk and the Severn.

All over this immense district the fever was scattered. My attendance began in May and terminated in November, 1847: during these six months upwards of 6000 Irish got advice.

The thermometer was several degrees above summer heat in May when I entered the barn, not worthy the name of hospital,—a shocking place. The darkness terrified me as I stepped over the beds of those creatures as they lay side by side, moaning and groaning, and those who were able calling for "Water! water! oh! the thirst!" A candle was required to examine the anxious face, the flushed cheek, and the parched tongue, of those who lay in the angles of the building.

According to the reports of the last week thirty had died; yet the barn was full; the places of the dead were quickly taken.

Those many deaths alarmed me. I looked for the cause, and quickly found it in the want of air and light. Next morning the bricks and mortar were removed from four oblong windows at the men's side. One large blind window was opened at the women's side, about sixteen feet from the ground, and then the healthy summer breeze wafted over the wooden partition which separated the male and female wards. The windows and doors were kept open day and night until September.

On the week following this ventilation we had only nine deaths, and the recoveries were increased in proportion. I have kept no notes, so you cannot expect more than a glance. Indeed I had not time to take notes; but I can readily state the number of inhabitants who came under my care with the fever, or were seen by me in consultation.

1. The chaplain; 2. the surgeon; 3. the master; 4. the matron; 5. the nurse (all Welsh); recovered.

6. The gardener to the Union (Welsh); died.

7. A Roman Catholic priest (Italian); recovered.

8. The porter at the hospital (Welsh); died.

9, 10. Two nurses (Irish); recovered.

11, 12, 13. Three prostitutes (Welsh); recovered. Each had gonorrhœa, which did not diminish during the fever.

14. A brothel keeper (Welsh); recovered.

15–19. A family of five (Welsh); all died.

20. The son of the master to the Union; recovered.

21, 22. A man and wife (English); died.

23. A labourer (English); recovered.

24. The nurse to the Refuge (Welsh); recovered.

Of those twenty-four who got the fever from the Irish, five had typhus (Nos. 6, 7, 8, and 22); the others had continued fever of seven, fourteen, and twenty-one days' duration.

A poor Cork woman, after her arrival, and while on her way to the relieving officer, got labour pains, and was delivered in the street. She was put into one of those unventilated black-holes, and died of fever in a few days; her husband and five children quickly

followed her. Those seven persons would not, probably, have died or got the fever if left unprovided for by the poor law.

I stated to the Board of Guardians how they were the cause of this spread of fever, and advised an *open shed* to be erected, for which £30 was granted. This had almost a magical effect in checking the fever; the applications to the hospital diminished.

You see by my Report how very few English and Welsh caught the fever; but it so happened that at Caerleon the Irish who were resident there (some so long as twenty years) only had the fever. Their food was the same as the Welsh and English, but their clothing was light; not one wore flannel against the skin, and flannel, I believe, is a great preventive against fever, keeping out the heat in summer and the cold in winter, equalizing the temperature of the body. A non-conductor next the skin is essential to people living in a climate so variable as our's, one day burning hot, the next frequently piercing cold; and on this account the poor should be told that a woollen shirt is more wholesome than a calico or linen one. Although I do not recollect having seen fever in a Welsh or English family at Caerleon, yet I saw it at Nash; and I must believe the disease contagious, for all our nurses had fever, and any one remaining long near the sick got ill with febrile symptoms, resembling the symptoms of the patient that mostly engaged their thoughts. Those patients who came from a particular lodging house in Friars' Fields were sure to die, all of them getting delirium.

One morning, as I entered the hospital, I saw the priest kneeling by the side of a lovely Irish girl in the agonies of death. I sent him word that he would be very likely to get her fever if he continued so close to her bed. A few days after I saw him with the same disease, the head greatly engaged, fever running high, with paroxysms of delirium, requiring two men in attendance.

Among the comfortable classes head symptoms were most frequent.

The poorer classes had chest and abdominal symptoms; all the starved complained of their hearts,—a feeling of sinking in the epigastrium. One sad, gaunt, tottering young lad cried out, "Oh! doctor, my heart's clean gone," Pains in the legs and back were constant.

We had no well-marked critical phenomena in the cases of starvation, nor had we, during my six months, in any case purpuric spots, petechiæ, or epistaxis.

We had but two cases of dysentery; one died. We had diarrhœa more or less in every case.

We had few cases of relapse, and those few arose from incaution in diet. The least portion of animal food taken into the stomach before the tongue got clean produced a relapse most tedious and difficult to treat.

One person, attended at her home, had bed-sores; and had the

cases been attended to at their homes I do believe the mortality would have been doubled.

The densely populated, badly ventilated, and undrained districts presented all the fever, and, of course, a great mortality.

The duration of the disease varied from seven to fourteen and twenty-one days, but the relapse continued for thirty and forty days. There was nothing remarkable in those primary cases which were subsequently followed by relapse.

There were hardly any modifications of the symptoms in individuals of the same family placed under similar circumstances.

The diversity of symptoms in members of the same family who had contracted fever from the same cause was so slight as not to be noticed.

The usual sequelæ were effusions of serum, first in the chest, next in the abdomen,—both fatal.

In such cases alteratives and absorbents were given. That mild preparation, hydrargyrum cum cretâ, combined with Dover's powder, I found best in checking the diarrhœa. When fulness of the stomach was much complained of, a scruple of ipecacuanha as an emetic, and one hour after a scruple of rhubarb as an aperient was found useful.

Local bleeding was resorted to in some cases of delirium with watchfulness.

Regimen did most good; farinaceous food, with two glasses of port wine a day. I also gave table beer and broth when the tongue cleaned and the stomach strengthened; and lastly, meat. The nurse had camphor mixture to give to those who called for physic.

I treated the cases of collapse, with debility and insensibility, with a pint of hot porter, a warm bed, hot bricks rolled in flannel to the feet, and a large sinapism over the chest and abdomen for twenty minutes. The effect of this treatment was most pleasing; the patient fell asleep, and awoke next day with a warm skin, requiring only to be dieted for a few days.

Lumbago was a constant complaint. Pains in the chest, and flying here and there, were relieved by a mustard poultice,—a most useful application in any shape,—as a stimulant applied largely and for a short time; as a counter-irritant kept on longer; and sometimes I used it to produce vesication.

One remedy I should not omit, and by far the best medicine,—*light* and *air*. A pure atmosphere is a wonderful medicine. I procured its administration here, and in a few hours I saw the oppressed breathing relieved, the livid lips become rosy; the thirst was diminished; the disease was changed: those poor exiles had the dungeon opened.

It is a great oversight that people give their physicians more credit for *curing* than for *preventing* disease, and, indeed, more pay too. Notwithstanding this ingratitude, I must give the preventive remedies their due,—air, light, water, good fires, woollen clothing next the skin, temperance, and three or four meals a day of wholesome food. The medical attendant should always, on leaving an ill-

ventilated fever house, repair quickly to the nearest hill, and clear out his lungs with fresh air.

A drunken porter had fever four times, and a nurse twice.

We had some cases complicated with small-pox. One little girl had been vaccinated; a few days after fever set in; she got confluent small-pox with the cow-pox, but yet made a rapid recovery. This case agrees with Jenner's views, who said, in a letter to Lord Egremont: "I do not consider them as two distinct diseases, but as *varieties* only of the same disease; and therefore they might co-exist in the same constitution, and that shows a mixed disease had been produced."

I have just read the following account of the Irish poor in the *Monmouthshire Merlin:* "The number of those homeless outcasts who found temporary shelter in the Refuge of Newport, between the 31st December, 1847, and the same date, 1848, was no less than 12,505!" This was the year after I left that place: it is a pleasure to know that they have now an open shed and a ventilated Refuge. Had the editor of the *Britannia* read your Report of the Famine-fever and the treatment adopted by the Irish physicians, he never would have written the following: "But while the doctors are busy in writing their prescriptions, the wretched patient continues to waste away, and each new remedy she takes only aids the fearful progress of exhaustion."

I have the honour to be, &c.,
R. Tuthill Massy, M. D.,
Physician to the Exeter Dispensary.

May 16, 1849.

To the Editor.

Case of acute Glanders from Infection. By Dillon Kelly, Esq., Mullingar.

James Donnelly, a carman, ill since the 23rd of August, when he first complained of chilliness followed by headach, thirst, and loss of appetite, for which he took some aperient medicine, and continued to work on till the 25th, when he was obliged to lie down.

When I first saw him, on the 27th, he complained of intense pain in the lower portion of the left side of the chest, of so excruciating a character, that the slightest motion was all but impracticable, respiration now being performed with the greatest difficulty. Dulness on percussion, but no frottement or egophony could be detected; cough; hot, dry skin; headach; pulse 120, full and hard; tongue foul and covered with a tenacious whitish paste; thirst: passes water freely.

Considering the attack, from the great constitutional disturbance accompanying it, one of pleuritis, although some of the pathognomonic signs of that disease were not present, I took about sixteen ounces of blood from the arm, with marked relief (blood buffed but not cupped), and gave half a grain of tartar emetic every second hour, and five grains of calomel at bed-time.

29th. Pain in side and head have completely disappeared; cough all but gone; pulse 108, soft and compressible; skin still hot; complains occasionally of acute pains shooting through the right hypochondrium, with much distress and restlessness at night; thirst still considerable; white, foul tongue; hot skin: tartar emetic to be continued, increasing the intervals to four hours; five grains of calomel at bed-time, washed down with a quarter of a grain of acetate of morphia in one ounce of camphor mixture.

31st. Complains to-day of pain of so excruciating a character, in the left natis, accompanied by such excessive sensibility, that the slightest motion could not be attempted; the least pressure even over the seat of soreness, which was confined to a circumscribed space not more than one inch in diameter, midway between the acetabulum and posterior superior spine of the ilium, would cause him to scream out in intense agony.

Viewing the attack now in the light of acute muscular rheumatism complicating neuralgia, I had recourse to firing (the state of his pulse contra-indicating even topical bleeding), and with the most happy result, the pain ceasing as if by magic. Fifteen drops of colchicum wine were given every fourth hour, and a morphia draught at bed-time.

September 1st. Had a very good night; the pain, however, again returned during the morning, but not with the same degree of intensity; there is now, for the first time, a tendency to diaphoresis, which in this case is destitute of the characteristic acid smell of the rheumatic secretion, a just perceptibly fetid odour developing itself in its stead; bowels natural; passes water freely: a blister to be applied over the seat of pain, and the colchicum and morphia repeated.

2nd. Much relieved: blistered surface to be dressed with mercurial ointment, and the colchicum to be continued.

4th. Says he feels greatly improved; perspired copiously during the night; pains have ceased.

6th. Had a most restless night, from retention of urine, which required the introduction of the catheter; the emptying of the bladder, however, did not entirely remove the restlessness; tongue still foul, and darker than it was, but moist; bowels regular; quite free from pain: half a grain of acetate of morphia and one ounce of camphor mixture at bed-time.

7th. A small accuminated pimple, surrounded by a crimson areola, made its appearance during the night, over the right cheek, which at the evening visit had assumed the appearance of a pustule, surrounded by an irritable-looking darkish red circle. The cheek of the opposite side was occupied by a reddish brown tumour, resembling a patch of erythema nodosum with erysipelatous inflammation; a similar tumour having developed itself on the back and inner aspect of the left hand, and an incipient one on the dorsum and inner aspect of the opposite foot.

These being most alarming appearances, and generally indicative of specific disease, led to the inquiry whether or not his horse had

lately any running from his nose; being answered in the affirmative, the disgusting-looking malignant pustule of acute glanders was before me, and the anomalous symptoms of that frightful disease, so long lurking in the system, at once revealed: punch, beef-tea, acetate of morphia, and Mindererus' spirit, was the treatment adopted under these circumstances.

8th. Had a quiet night from the anodyne; face, neck, and extremities now studded over with minute pustules, having all the appearance of varicella, each surrounded by a crimson areola; conjunctiva of left eye, immediately within the outer canthus, the seat of a similar pustule; tongue whitish brown, and loaded, but moist; no sordes on teeth; no impairment of intellect or delirium; skin perspiring copiously, the secretion developing a strong acid reaction on the application of litmus; bladder has recovered its powers; urine rather copious, taking the profuse diaphoresis into account, orange-red, transparent, sp. gr. 1026, acid, showing slight traces of bile, no albumen or urea, but uric acid in abundance.

9th. The minute pustules of yesterday have become exceedingly disgusting in appearance; purulent vesicles on the face and neck, whereas those on the extremities have completely disappeared; pulse 120, weak and thready; tongue a little darker near the tip, but still moist; no nasal discharge, but slight stuffing in the posterior nares; rather copious expectoration at times, when he says it comes up in mouthfuls; two small, hard, painless, and colourless tumours have developed themselves, one on the outer aspect of the arm, a little below the insertion of the deltoid, the other on the fore-arm, over the upper third of the supinator longus; no delirium or confusion of ideas.

Dr. Stokes, of this town, having seen him with me at this stage, suggested, that as the symptoms in the commencement appeared so much improved by the mercurial treatment, recourse should be had again to it, hopeless although the case was, and advised a trial of the oxymuriate. A table-spoonful of a mixture consisting of two grains of the oxymuriate to eight ounces of water was directed to be given every fourth hour, and his punch and nourishment to be continued.

6 P. M. He is now bathed in a most profuse and slightly fetid perspiration, exhibiting a strong acid reaction with litmus; a few pustules in a transition state of development are unequally scattered over the upper extremities; pulse 160, weak and thready; tongue moist; intellect unimpaired. Some of the pustules on the face have now assumed the appearance of those produced by tartar emetic, more especially two large ones on the malar tumour, which is considerably increased in size, and of a shining dusky red colour, and, together with the conjunctiva of the eye on that side, which is in a state of transparent amber-coloured chemosis, and so exaggerated as to separate the swollen lids, protruding to fully the size of a small currant at their outer angle, gives to the countenance a most sickening and truly frightful appearance.

Since morning the tumours on the arms have become tense and elastic, but without fluctuation, and two more have during that interval developed themselves on the left leg, one over the gastrocnemius, and the other immediately under the insertion of the ligamentum patellæ. He has passed water freely during the day, presenting the same character as that of yesterday, but with increased specific gravity, which to-day is as high as 1033; it preserves its transparency on cooling, and on the addition of one-third of nitrous acid assumes a dirty greenish purple colour, also transparent.

11th. Died at 5 A. M.: intellect unimpaired to the last moment.

It had for a length of time been a *questio vexata*, whether the virus of glanders was or was not infectious; most veterinarians holding it was, strictly speaking, contagious, and moreover, that actual contact of the diseased secretion with an abraded surface was absolutely necessary for its propagation.

More recent and more extended inquiries have, however, proved the fallacy of those opinions; and the profession now may generally believe in the infectious nature of the disease, an hypothesis, the correctness of which the history of the present case goes a great length indeed in confirming, as in it we have positive evidence of the propagation of the disease, not by contact with an abraded surface, but purely by venous absorption, probably through the medium of the respiratory apparatus.

In this case there was no abrasion of the cuticle, no appearance of sore, pustule, or vesicle, on any part of the patient, so far as he could remember, prior to the attack; no recollection on his part of ever having wiped his hands or face with any cloth used about the horse, or of ever having drank out of the same vessel; on the contrary, he merely drove him and worked with him, his wife and children generally making up the animal at night, feeding him, and harnessing him again in the morning.

The unfortunate subject of this case was, like a great many of his class in Ireland, obliged to keep his horse in the same habitation with his family, which consisted of but two rooms, one an L-shaped apartment containing the kitchen and stable, the other his bed-room, a miserable hole about six feet by seven, separated from the stable by a four-inch partition broken through in three or four places, and presenting at its junction with the main wall of the house a fissure extending from the floor to the top of the partition, and increasing in width from below upwards, where it attained fully the extent of four inches.

In the bed-room, immediately opposite and quite close to this fissure, the head of the unfortunate man's bed was placed, the bed being parallel to and in close contact with the partition; and on the opposite side or stable was the crib from which the horse was fed, and to which he was tied at night.

A paved channel separated the stable from the kitchen, which miserable attempt at cleanliness made the stable *proper* rather too short for a horse of any size, who, to avoid lying on the pavement,

litter not being very abundant, took at night a diagonal position, and as he was tied to the right, his head was brought into immediate contact with the angle where the fissure was, as was quite evident from the stains on the main wall and partition, immediately close to which, and on the same level, slept his master, who, by this unfortunate arrangement, must have been inhaling, night after night, the air expired by the animal, loaded with the virus of glanders.

These are facts not only curious in themselves, but which, in my opinion, go a great way in proving the infectious nature of the disease; and I give them to the profession, in so far as they add another case in proof of the correctness of that hypothesis; at the same time trusting the publication of this and similar cases may at length arouse the Legislature to the necessity of placing glandered horses under the surveillance of the police.

A Case of Poisoning by Laudanum, in the advanced Stage, successfully treated by Bleeding. By James S. Hughes, M. D., F. R. C. S. I., Surgeon to Jervis-street Hospital.

I was summoned to see (in conjunction with the late Dr. Kerin, and Messrs. Daly and Gorman of Henry-street) a gentleman in the Londonderry Hotel, who was supposed to be dying of apoplexy. We found him lying in bed, on his back, in a state of insensibility, with stertorous breathing; pulse extremely rapid, scarcely to be felt; face leaden-coloured; lips purple; pupils minutely contracted and fixed; extremities cold, and covered with a clammy perspiration. On throwing down the bed-clothes to examine him more minutely, a half-ounce empty bottle, labelled "Laudanum," fell on the floor, and the only information we could obtain was, that the patient had spoken to one of the waiters on that morning, between nine and ten o'clock, at his bed-room door, dressed in his night-shirt, and that, suspicion being excited, at five o'clock the door was forced open, and he was found in bed in a state of insensibility. The stomach pump was immediately resorted to; the tube being introduced, an attempt was made to withdraw any fluid contained in the stomach, but it having been ascertained that there was no fluid in that viscus, water was injected into it, and withdrawn, in order to remove any solid material, if present; the fauces were irritated, and a twenty grain solution of sulphate of zinc was injected through the tube, and repeated after a short interval, without producing emesis. Sinapisms were applied to the calves of the legs, together with heaters and turpentine frictions to the extremities, by which means the temperature was slightly elevated, and the pulse became fuller. Cold affusion to the head was next resorted to, with a view of taking off the pressure from the brain by unloading the vessels, which were turgid, but without effect. The patient appeared to be sinking, the coma becoming more profound, and the breathing more and more stertorous. On considering the

history of the case, and the probability that the laudanum had been swallowed immediately after the patient had returned to his bedroom in the morning, and that, if so, full time for the absorption of the poison had elapsed, and viewing the patient as sinking under cerebral congestion, as evidenced by the great turgescence of the vessels of the head and neck, together with the stertorous breathing, we determined to try the effects of blood-letting, and for this purpose the left temporal artery was opened, the blood from which at first merely trickled down, being very dark-coloured and thick, but after a few seconds a jet of arterial-coloured blood sprang forth, *immediately* on which the patient gave a deep sigh. Vomiting, with the expulsion of a small quantity of fluid containing a little indigested matter, devoid of taste and smell, and mixed up with mucus, ensued; his pulse became fuller, and less frequent; sensibility returned, and his countenance rapidly improved. We had him then walked up and down, between two stout porters, through the long corridors, the men being relieved from time to time, for we found it of vital importance to keep him in forcible and active motion, for if he was left to himself for a moment, stertorous breathing and a state of somnolency ensued. Brandy punch and hot coffee were given to him at short intervals. The drowsiness continued for over twenty-four hours after he came under our observation, during which period he was kept in a roused state, and the stimulants were continued.

This gentleman perfectly recovered, and when convalescent made the following statement. He said that, some time before the attempt to poison himself, he had determined to commit suicide, provided he did not receive a favourable answer to a letter which he had addressed to a high official officer in this city; and that, with a view of carrying out that intention, he went to a house in Sackville-street, where he asked for one ounce of laudanum, but that, as he admitted that he was not in the habit of using it, the gentleman he addressed very properly refused to give it to him. He passed on to a shop in an adjoining street, and, being then on his guard, said he wanted half an ounce of laudanum, and told the shopman that, as he was in the habit of taking it, he wished to have the strongest in the house: the man, not suspecting anything wrong, gave it to him. He then returned to his hotel, went to bed, and having gone out on the following morning, in his night-dress, to the landing at his bed room door, to inquire after the expected letter, and having been informed by the waiter that no such letter had been left at the hotel, he went back to his room, and, having locked the door, returned to his bed and swallowed the half-ounce of laudanum, after which he soon became insensible. Thus upwards of seven hours must have elapsed, from the time of taking the poison, till the alarm was given. In a physiological point of view, the result of the abstraction of blood was highly interesting, for the instant the congested brain was relieved, and thereby enabled to

receive impressions, and not till then, vomiting ensued, the result of reflex action, the stertorous breathing ceased, and the patient was restored to his senses. From the details of this case there can be no doubt that, by the timely use of the lancet, the patient was snatched from the most appalling of deaths, viz., that by suicide.

That the propriety of having recourse to bleeding in the advanced stage of poisoning by opium, when accompanied by symptoms of cerebral congestion, is based on scientific principles, and has the sanction of the highest authorities; it is only necessary to refer to the works of Orfila, Christison, and Taylor; but as I know, from the treatment of more cases than one of poisoning by opium in the advanced stage, which have come to my knowledge, and in which there was evidence of congestion of the brain, that the value of this measure has been occasionally overlooked, principally from the fear of still further promoting absorption, I have been induced to record the foregoing case, which occurred some time since, as it illustrates the marked success which may follow the adoption of blood-letting in *suitable* cases of poisoning by opium, or its preparations. That depletion does favour the process of absorption in the early stages of poisoning is now generally admitted; but we must hold in mind, that a time may come when absorption has been carried to its full extent, and when the patient is sinking from congestion of the brain; and it is in this particular stage, when after emptying the stomach of its contents, that blood-letting is not only justifiable, but imperatively demanded. Dr. Christison, when alluding to the treatment of poisoning by opium, says that "venesection has been recommended, and successfully used by some physicians. If the stomach be emptied, and the patient kept roused, as may almost always be done when means are resorted to in time, venesection will be unnecessary; however, when the pulse is full and strong, it may be prudent to withdraw blood, and it certainly appears that, in most cases where this remedy has been employed, the sensibility began to appear almost immediately after." And Mr. Taylor, in his recent work on poisons, when referring to blood-letting in poisoning by opium, states that "bleeding should not be resorted to until *after* the poison has been completely removed from the stomach, as the abstraction of blood acts injuriously by tending to promote absorption; it is indeed only justifiable when, during the second stage, there is a strong, full pulse, with symptoms indicative of cerebral congestion. If the pulse should become feeble and sink after the abstraction of a small quantity of blood, the operation should be carried no farther." The following case of poisoning by laudanum, in which bleeding was followed by immediate relief, is so full of interest, that I think it worthy of a place here. It is published by Dr. Richardson, in the Edinburgh Medical and Surgical Journal, vol. xvii. p. 226:

"An unfortunate female, when in a carriage with a friend, swallowed laudanum; the action was observed, and she was conveyed by

her terrified companion, in about half an hour afterwards, to the house of the practitioner under whose care the author studied: she was taken out in a state nearly insensible. Ten grains of vitriolated zinc were instantly administered without relief; ten more were added in a few minutes afterwards, and other means were in vain resorted to, to excite the action of vomiting, as the comatose symptoms continued evidently to increase; a vein was opened, and nearly twenty ounces of blood taken away; sense and motion *immediately* began to return, the emetic action of the zinc was produced, and the patient was left in a short time afterwards with no other remaining symptom of the danger she had escaped from, than a little languor"(*a*).

Cases in Surgery. By T. Purefoy, M. D., Cloughjordan.

Remarkable Case of Obstruction of the Bowels.—A healthy little boy, aged 6, on the 20th of August, complained of pain in the abdomen, which returned with severity at short intervals. The occurrence of pain was soon followed by vomiting of bilious matter, mixed with food, but without any relief of the pain. An emetic was now given, and subsequently a purgative; the emetic operated freely, but the purgative did not move the bowels. The patient was first visited in about thirty hours after he had been taken ill. The abdomen was then swollen and tense, but not decidedly tender; tongue soft, and thickly coated; pulse 90, and compressible; fever, thirst, obstinate constipation, and irritability of the stomach, so that both fluids and solids were quickly rejected from this organ by vomiting. The urine was of a natural appearance, and the intellect remained quite sound. The treatment consisted in the detraction of blood, followed by the use of the warm bath; at the same time that unremitting efforts were made to remove constipation, and unload the bowels. For this purpose, calomel with opium, croton oil, sulphate of magnesia in solution, and other purgatives, were successively tried, and, as a forlorn hope, the tobacco enema; but all proved utterly unavailing, as the lower portion of the great intestine alone was emptied of its contents. The poor little suffererer lingered for nearly a week in extreme agony, and finally sunk, apparently rather from the effects of exhaustion than in consequence of the existence of inflammation within the abdomen.

Post Mortem Appearances.—Stomach and intestines much distended by very fetid gas. Mucous membrane of stomach pale, soft, and readily reduced by the finger to a mere pulp. The convolutions of the small intestines were glued together by recently effused lymph, particularly in the iliac regions, whilst the lining membrane was

(*a*) For other cases on record illustrative of the advantages to be derived from bleeding in poisoning by opium, I would refer particularly to those by M. Castara, *Journ. de Chimie Med.*, Mars 1831; M. Jul. Fontenelle, *Revue Med.*, Sept. 1829; and Mr. Ross's case, Edin. Med. and Surg. Jour., vol. xix. p. 247.

throughout in a state of congestion. The appendix vermiformis was found of an unusual length, and to have formed a complete stricture on the ileum just where it entered the cæcum, the colon throughout its whole extent being empty, and completely collapsed. The appendix vermiformis was thickened considerably by a coating of lymph, of a deep bluish tint when the lymph was removed, and had made by its pressure a livid-coloured circle quite round the ilium at the seat of stricture.

This case is of interest, in showing that certain mechanical causes may exist during life, capable of effecting a fatal obstruction of the bowels, and yet be beyond the reach of art, either in the way of ascertaining their existence, or of obviating their effects. Fortunately such a case as this just now recorded is of rare occurrence, and will most probably, wherever it exists, destroy life; the fatal termination will of course be much expedited by the undue or incautious use of purgatives. I have no doubt that if purgative medicines are given in these cases without any effect, which, under ordinary circumstances, would produce a free action of the bowels, we may correctly conclude that the circumstances of the case are extraordinary,—that some mechanical obstruction must exist,—and that therefore the further use of purgatives may do harm, but cannot do any good.

Incarcerated Inguinal Hernia.—A healthy labourer, aged 60, who had been the subject of hernia for many years, which he had never found any difficulty in reducing, became suddenly ill one evening, after his day's labour, in consequence of being unable to return the protruded portion of intestine.

At visit he was found lying upon his back, the abdomen tympanitic, tongue coated, pulse moderately full and frequent, whilst there existed a tumour in the groin, of the size of a hen's egg, tense, elastic, somewhat moveable, and tender under pressure. Warm baths and other auxiliaries not being attainable in his wretched cabin, the taxis was perseveringly, but unavailingly, employed for a considerable period of time, when the increasing tenderness of the tumour rendered the continuance of the operation impracticable. The bowels being constipated, two pills, containing calomel and colocynth extract, were given, followed by turpentine enemata, every third hour, to free the bowels. On the following morning, at 9 o'clock, he was found in the same state, the symptoms more severe than on yesterday, as he now vomited occasionally, whilst the bowels remained obstinately confined. As a last resource, he was now placed upon his hands and knees in bed, whilst a long flexible, gum-elastic tube was introduced into the rectum, with a hope of getting away the flatus by which the abdomen was much distended; but the manœuvre did not succeed. Next, a large basin of tepid water was brought to the bed-side, the greater portion of which was injected into the rectum. At this period, a very urgent straining effort coming on, he was made to resist it as long as possible; and when ultimately allowed to relieve the bowels of

their load, he passed a large quantity of feculent matter, together with an unusual amount of flatus, which gave him immediate and decided relief. The taxis was again immediately resorted to, upon his returning to bed, when the empty and flaccid intestine was returned into the abdominal cavity without further delay or trouble. The old man is yet in the land of the living.

There can be little doubt that, in this second case, the incarcerated intestine would very soon have become strangulated, had not the intestine been relieved from the pressure of the stricture; and it is equally certain that the water injected by the rectum effected this desirable object, by stimulating the peristaltic action of the whole tract of the intestines, thus causing such a discharge of flatus and feculent matter, that the distended knuckle of intestine, which formed a tumour quite too large to re-enter the abdominal ring, was now rendered so small and flaccid as to be easily returned into the abdominal cavity. It was a lucky experiment for the patient, as, exclusive of its being *perfectly harmless*, it rendered a surgical operation unnecessary, which but a little before appeared to be almost inevitable.

On the Use of Bandaging in relieving the Cramps in Cholera. By Evory Kennedy, M. D.

The habit of applying a knotted handkerchief as a tourniquet over the spasmodically contracted muscles in cases of cramps, and always with instantaneous relief, led me to test the efficacy of bandaging, many years since, in a case of universal cramps occurring as the result of a violent sustained effort to maintain his position on horseback in a person who had been run away with. Every expedient had failed, the tourniquet only giving partial relief, as the muscles of the trunk were engaged equally with those of the extremities. Bandaging each limb separately, and eventually the trunk, was attended with immediate relief. The recollection of this case induced me to try its efficacy in the cramps of cholera, and with such results as justify me in calling attention to it, as it not only accomplished the object had in view, but also succeeded in keeping up the temperature of the limbs more satisfactorily than by means of friction. Those who have practically dealt with the worst cases of cholera know but too well the difficulties attending the attempts to keep up the heat of the extremities by any or all of the plans at present in operation;—the copious clammy perspiration constantly exuding from the surface, the evaporation of which tends to lower the temperature; the exposure unavoidable in keeping up the friction adding to the chill; the impossibility of keeping up artificial heat so universally over the limbs and trunk as to maintain an equable temperature. The further objections against depending upon these means, from neglect on the part of attendants, and restlessness, jactitation, and exhaustion on the part of the patient, render it of importance to effect our object by some means unat-

tended with such grave objections, or at least to have at our disposal an additional method which may be used as auxiliary to these. Now, I imagine bandaging affords us this desideratum. The bandages should be made of new flannel, cut into stripes of two inches broad; should be applied from the toes and fingers up to the groins and axillæ, as tight as can be borne without inconvenience. The copious perspirations, instead of evaporating, become absorbed into the flannel, and act like a continued warm fomentation, the superincumbent bed-clothes assisting our object by preventing evaporation and the abstraction of the animal heat of the body; whilst our efforts to sustain the temperature are still further aided by placing hot bottles, heated bricks, salt, &c., in contact with the extremities and surface. The disturbance of the patient precludes the application of a bandage over the trunk, similar to that of the extremities. A very simple expedient, however, is supplied in a piece of flannel, or an under-blanket, about a yard and quarter long by half a yard broad. This should be torn down the centre for about a third of its length, and across the remaining portion ten or twelve stripes of flannel, a yard and quarter long by two inches broad, should be sewn. This should be slipped under the patient's back, drawing the two torn ends over the shoulders and down on the chest, and then the many-tailed bandages applied across the chest and abdomen, alternately over-lapping each other, as tightly as the patient can bear without inconvenience. This form of bandage has the advantage of being easily removed and re-applied when it becomes an object to make stimulating applications to the abdomen. The bandages may, however, be rendered available in making our applications, whether stimulating or anodyne, without removal, by pouring any fluid upon them, as they absorb it and keep it in close contact with the surface. This, however, requires to be done with care, else too great a degree of irritation might be induced by allowing the bandages charged with stimulating applications to remain too long in contact with the surface.

Anxious to test the utility of bandaging in cholera upon a large scale before calling the attention of the profession to it, I requested Dr. Travers, physician to the Kilmainham Cholera Hospital, to make trial of it, and give me the results. This he has been good enough to do. His report is subjoined:—

"*Kilmainham Cholera Hospital, 27th Sept.*, 1849.

"Dear Sir,—I have made several trials of your system of bandaging, and in every case had the satisfaction to observe that the effect was beneficial. Before I had seen your paper, I had frequently used a broad ligature round the affected limb, but generally with but little benefit beyond a temporary relaxation of the spasms. In one case, that of a child, your bandage was objected to, but in every other in which it was used either by me or by the resident medical officer, the results were encouraging. I by no means wish to exaggerate the advantages of your plan, or to repre-

sent it as a specific for the symptoms it is intended to relieve, but as an assistant in the treatment of a most intractable disease, it forms a most valuable addition to our resources.

"I remain truly your's,

"Robert Travers.

"*Dr. E. Kennedy.*"

Case of Apoplexy associated with Calcareous Deposits in the Communicating Artery of the Circle of Willis. By Henry Carline, Esq., Assistant Surgeon of the 6th Dragoon Guards.

So few cases of apoplexy occur in which the cause of the extravasation of blood can be distinctly traced after death, that I consider the following worthy of being recorded. It is also an example of the formation of calcareous matter in the arterial system of the brain, at a comparatively early period of life.

H. M'C., aged 29, a stout Irishman, by trade a shoemaker; five feet ten inches and a half high, with dark complexion, hazel eyes, and dark brown hair, enlisted 24th August, 1840, and has been seven times in hospital since then, viz.: in 1840, for eleven days, with diarrhœa; in 1841, for thirty-six days, with venereal (gums affected); in 1842, for two days, with colic; in 1845, for twenty days, with cynanche tonsillaris; and again, in the same year, for three months, with pneumonia; in 1847, for seventy-two days, with venereal (gums affected); in 1848, with venereal; and in April, 1849, for five days, with slight contusion of the right side of the forehead, and a slight cut on the eye-brow.

From the statement of this man's comrades, it appears that he was cleaning his appointments at a quarter to 9 o'clock in his barrack-room, on the evening of the 25th of July last, when he suddenly staggered, and fell upon his left side. On being raised up he complained, in an altered voice, of having hurt his left knee against the form. He was put to bed, when he vomited a good deal, and said that he could not use his left arm or leg. At 9 o'clock he was reported sick, and, when visited, complained, in a stammering voice, of a desire to vomit, though he could not throw anything up, and of pain over the right eye-brow: he was immediately removed to hospital.

The countenance was now very plethoric; he was insensible, frequently picking the right nostril with his right fore-finger; the the breathing was stertorous; pulse intermitting, 45 in the minute, very full and hard; pupil of the right eye much dilated; that of the left contracted: the skin was cold and slightly clammy. He was bled to fifty ounces; as the blood flowed the intermissions in the pulse occurred at longer intervals, until at length it rose to 100, very soft, and free from intermission. Bags of hot salt were applied between the thighs, and bottles of hot water to the feet; blisters to the neck, chest, and calves of the legs; the hair on the head closely clipped, and cold evaporating lotions applied. He rallied slightly

for an interval of half an hour, when the pupil of the left eye was much dilated, but soon resumed its contracted state. At midnight the stertorous breathing was much less; pulse still continuing 100, tolerably full and soft, and the skin of its natural temperature. At this period a creeping motion was noticed to pass through the whole body, at intervals of five or ten minutes; he frequently used both the left arm and leg, and was occasionally convulsed, with bloody, frothy mucus exuding from the mouth. He lingered until twenty minutes before 2, A. M., 26th July, when he expired, without having been at all conscious since admission.

The *post mortem* examination was made thirty-one hours after death. The body was very stout and muscular; slight decomposition had taken place. On removing the calvarium, great congestion of the vessels of the surface of the brain was apparent. On the right side the communicating artery of the circle of Willis contained several small calcareous deposits, varying in size from that of the head of a pin to that of a grain of wheat. The lateral and third ventricles of the same side were filled and distended with a large clot of black blood; and some fluid black blood and bloody serum were found in the left lateral ventricle: the substance of the brain, in other respects, was perfectly healthy. *Chest.*—There were some firm adhesions anteriorly between the pleuræ of the right side, evidently of long standing; the lungs were perfectly healthy, but the heart was somewhat hypertrophied; the valves were healthy. *Abdomen.*—A small mass of scrofulous tubercles was situated in the lower edge of the great lobe of the liver; the other viscera were perfectly healthy.

Case of recent Dislocation of the Hip reduced with great Facility by the Aid of Chloroform. By W. R. WILDE, F. R. C. S. I.

THE following case is only worthy of notice from the decided influence which chloroform exercised upon it. Upon the 7th of the present month, a gentleman in the prime of life, of strong make, great muscular strength, and in perfect health, while walking across a lawn some miles from town, about half-past ten o'clock at night, fell into a sunk fence from the upper side. He was immediately conscious of having experienced some great shock, and said his leg was either broken or dislocated, as, upon attempting to rise, he found it impossible to put the limb upon the ground. An easy inside car was immediately brought to the spot, and on it he was conveyed to town with scarcely any pain. I saw him about half-past 11 o'clock, and found that he had dislocation of the hip upon the dorsum of the ilium. The only usual symptom of that accident which was not well-marked was, that the toes did not rest upon the dorsum of the right foot. As he was stripped and sitting upon his bed when I arrived, some slight efforts were made, for a few minutes, to reduce the limb, but without effect. I immediately procured the valuable aid of Mr. Ellis; and two gentlemen who resided in the house, together with a small servant boy, were all the assistance which we could

then (past 12 o'clock) procure. Having placed the patient lying upon his back upon a narrow lounger with a short arm, the usual extension and counter-extension were made, and kept up, as far as the force of our few assistants permitted, for about a quarter of an hour, without the least impression upon the distortion. Mr. Ellis and myself then agreed to try the effects of chloroform, as it was quite manifest that, without the usual mechanical contrivances, or very many more assistants, it would be impossible to reduce the limb, and it would be unwise to allow it to remain unreduced in so powerful a person as our patient until morning. Chloroform was immediately procured, which was commenced to be inhaled about 1 o'clock, two more assistants (boys) having been obtained, so that three persons held the limb and the sofa firmly by means of a sheet passed obliquely across the pelvis and over the groin, in the usual manner, while the other three were ready to make the extension. I administered the chloroform in a full dose, and the patient was very soon under its influence; the extension then commenced, and was kept up steadily, Mr. Ellis himself taking charge of the limb and making the proper rotation. In about four minutes after the patient was in a perfect state of anæsthesia, the dislocation was reduced with an audible noise, and upon the patient awaking from the condition of insensibility, he stated his total unconsciousness of what had occurred, and his perfect freedom from pain or uneasiness. He suffered no further inconvenience, and experienced no ill effects from the exhibition of the chloroform.

This case I think worth recording, as the dislocation certainly could not have been reduced, except for the aid of the chloroform, particularly at so late an hour of the night, and when the usual assistance could with difficulty be procured.

Observations upon Intermittents. By William Harvey, M. D.

[Read at a meeting of the Dublin Medico-Philosophical Society, 1st August, 1782(*a*).]

There is no disorder for which we have so many remedies as an ague, or in which more quack medicines have been employed, a sure proof that there is something still incomplete and imperfect in the present ordinary method of treating intermittents. I do not flatter myself with being able to supply these defects, but I conceive it to be the duty of us all, in a society composed for medical and philosophical improvement, to hazard conjectures that may set us a thinking, and be confirmed or rejected by future observation

(*a*) Extracted from the Memoirs of the Dublin Medico-Philosophical Society, vol. iii. p. 236, to which we referred in the Preface to the first Number of the present Series of this Journal. We have printed this Paper *verbatim* from the manuscript, and we sincerely wish the MSS. of medical men in the present day required as little correction. Dr. Harvey was, as our Irish readers are aware, the chief Physician in Dublin for many years; ague was of very frequent occurrence in Ireland in his time.

and experience. Not to waste more of your time in preface, I shall offer you some remarks on regular and irregular intermittents.

By the first, I mean such as are truly marked by regular paroxysms; by the second, such as where the paroxysms are anomalous, and the patient never has a complete intermission, but has a constant feverishness, and a swollen, jaundiced, cachectic appearance. This state is what the common people of this country call "a dead ague," meaning such as does not show itself in active, violent paroxysms, but leaves a constant heavy languor and sluggishness in the system.

In the first place, I would remark that all agues where the three stages of the paroxysm are complete have a natural tendency to cure themselves, and in many cases the physician need only be a spectator. This I have observed chiefly in tertians, and was formerly noticed by the ancients, who have remarked that the seventh paroxysm often terminated a tertian ague. Since the discovery of the Peruvian bark, and our more intimate acquaintance with the disorders of hot climates, we have, I apprehend, become too anxious to stop the recurrence of the paroxysms, by pouring in the bark too early, supposing that the fits had no tendency to remove themselves. I found, first by accident, and since by repeated observation, that where agues have been stopped prematurely they are apt to leave a state of listlessness and languor, degenerating into cachexy, that is only to be cured by nature and art exciting again new paroxysms. Hence the common people in this situation are rejoiced to tell you that they *shook out*, that is, that this anomalous state is changed to regular paroxysms.

In the treatment, then, of *regular intermittents*, I would recommend our not being in such a hurry to exhibit the bark, but to give four or five vomits at least, each a little before the accession of the paroxysm, and then to administer the bark in large quantities, in the dose of a drachm every hour during the intermission, beginning before the sweating stage has entirely ceased. I have found it useful to repeat the vomit at the time that the paroxysms should have come on, though the recurring of the fits has been apparently stopped; and it will be found advantageous to keep the bowels regularly open.

We may always be more encouraged to commence the administration of the bark where the vomits bring up or down large quantities of bile; for, whatever be the cause of ague, it is its nature to be particularly connected with the biliary secretion. Hence a common phrase among the poor people, that they have thrown up the ague, that is, they have found by common experience, where they vomit a large quantity of bile, the intermittent is less apt to return. The vomits, therefore, most useful are antimonials, as these emulge most powerfully the biliary system.

The practice, then, to be observed in regular intermittents consists in the constant administration of an antimonial vomit a little before the accession of the fit, plenty of diluents during the parox-

ysms, and large quantities of the bark in the intervals. We need not, however, be in great haste to exhibit the bark in this climate, as we shall find it more effectual after four or five paroxysms have passed, and that our patient has been plentifully emptied upwards and downwards. If this last regulation was carefully complied with, we should, I believe, seldom see such violent paroxysms as threaten the life of the patient, and oblige the physician to throw in the bark at all adventures, to obtain, if possible, a truce from the vehemence of the disorder. There may be particular circumstances in some agues that must require a variation of practice, but this is the case in every disease, and holds good against all general doctrine, and must, therefore, be left to the particular judgment of the physician. But if, after the ordinary treatment, or the long continuance of the disorder, the patients should grow languid and weak, and a general hydropic diathesis take place, we must have recourse to a different method of cure.

I now suppose the paroxysms have ceased, or return at very irregular periods, and also that they are incomplete in their several stages, while, at the same time, the patient grows extremely weak and bloated. In this state I have found it attended with an aggravation of all the symptoms to persevere in giving bark, and I am almost sure the miserable condition above described is generally brought on by the premature use of this medicine, or the improper exhibition of some other astringent. I must, however, observe, that there has been a particular obstinacy in the agues I have met with this season, as those of last year and the year before readily yielded to the common treatment. From the yellow suffusion in the countenance and skin in the *irregular intermittent*, we may naturally infer that a cachectic state has taken place; and from the foregoing connexion that was observed to obtain between the biliary secretion and the return of the paroxysms, we may suppose the liver the viscus chiefly engaged; add to this, that it is not uncommon to see evident enlargement of the right hypochondrium, and often the spleen becomes diseased, though, in my opinion, not so frequently in this country.

About a year ago a poor woman applied to me to be received into Steevens's Hospital. She had an enlargement of the liver and spleen, attended with all the marks of cachexy brought on from an ague improperly stopped by the too early administration of the bark. I gave her two grains of calomel every night, and purged her twice a week. When she had continued in this course for about ten days, she had a regular paroxysm of the ague, which had ceased to return for upwards of a month. After three or four irregular fits the type of the intermittent returned to its original form, a tertian, and she was vomited at the accession of every paroxysm, still continuing the use of the calomel. In the course of a fortnight or three weeks after this time the fits ceased altogether, becoming slighter and slighter, and the visceral congestions gave way gradu-

ally, so that she was dismissed, cured, in about two months from the time of her admission, without ever giving her any bark.

The success in this case induced me to think mercury possibly might be exhibited with advantage in the irregular state of ague described above, even where there was no mark of the viscera being engaged. But no cases occurring last year after this, I waited until this season, when I am certain I have had upwards of fifty patients in which I have given calomel with success.

In the course of this spring I had frequent opportunities of conversing with gentlemen returned from the East Indies, where I knew intermittents were apt to leave grievous complaints in the liver. I found from them that nothing was more common than a mercurial course for an obstinate ague, even where the liver did not show itself diseased. But, as this information did not come from medical authority, I still thought it equivocal. About this time I happened to see Mons. Senac's very ingenious treatise, *De Recondita Februm Intermittentium*, in which are many excellent observations. Among many remedies I found there had been a quack medicine sold at Paris which cured intermittents, and was afterwards discovered to be calomel and stibiated tartar, but he passes it over without recommending it.

Since this I have read a very pleasant, and, in many respects, a learned work, by Ramazzeni, on the diseases of tradesmen, in which he quotes a case, from a very old author, of a young man being very readily cured of an obstinate quartan, by salivation, as he was suspicious of having contracted the venereal disease, which was the cause of his being put under a mercurial course. He makes no farther use of this quotation than that possibly chemists and physicians might strike out a method of exhibiting mercury with advantage in fevers.

Weighing, therefore, all these matters, and being fully persuaded from experience that bark made the state of the ague above described infinitely worse, constantly increasing the hydropic tendency, I thought it fairly advisible to try how far calomel and stibiated tartar would answer; and that I might ascertain its sensible effects I have exhibited this combination of mercury and antimony in upwards of fifty cases. In three out of four of all the cases in which I have given this medicine, the paroxysms returned to their original type, generally speaking in about a fortnight, and sometimes in three weeks, unless in such cases as where a ptyalism has come on, in which instances I have seldom observed the recurrence of the ague; but I do not think they recover either so soon, or so certainly, as where the paroxysms re-assume their wonted periodical movements.

When matters are in this state I give antimonial vomits at the accession of the fit, and still continue the use of the calomel and stibiated tartar, until the anasarcous appearance has been removed, and that the patients have been sufficiently purged. For though

the general sensible operation of this medicine is by stool, it flies instantly to the salivary glands in some cases, and in others it produces no increased evacuation, in both which states it is necessary to purge the patient pretty smartly twice a week. The dose I have in general prescribed of this medicine is two grains of calomel and one of stibiated tartar [tartarized antimony], every night; and, as I observed already, its general operation is to occasion a revival of the paroxysms, which are to be treated as in an original ague; nor do I begin to exhibit the bark until six or seven fits have passed, and that the hydropic appearance is removed.

In most cases the intermittent ceases in six or seven paroxysms, and I seldom give the bark in this species of ague but as a general tonic medicine, after the febrile attacks have been entirely removed. Whenever ptyalism prevails much, I think I have seen it attended with bad consequences to administer the bark, though I have found wine extremely serviceable, a proof that their operation is not the same. The general dose of the medicine I before mentioned was two grains of calomel and one of stibiated tartar, taken every night, and the desirable end is a revival of the paroxysms, which, if properly managed, are nature's remedies to remove the disease: "Uti corpus suis viribus alimenta coquit sibique assimilat, ita non minus facultatem nactum est, morbosa et quæ præter naturam sunt subigendi atque contemperandi. Hinc ille tam salubris πεπασμὸς, quo conditiones noxiæ eorum quæ morbum intentant, aut faciunt, ita mitescunt, ut vel innocuæ fiant vel ad commodam ejectionem expeditæ. Quicquid in crisibus salutare est hac potissimum virtute nititur."

The whole, then, of my observations, may be reduced to this, viz.:—1st. That in the treatment of intermittents we should not attempt to stop the paroxysms until the patient has undergone plentiful evacuation by vomiting and purging. The contrary has, I fear, of late been too much the prevalent doctrine and practice. 2nd. That where the paroxysms have ceased, and a cachectic habit succeeded, it ought to be our endeavour again to excite and renew the fits; and where these have taken place, they are not to be disturbed by too premature an exhibition of the bark. 3rd. We should always have in view the natural propensity of intermittents to recur, the consequence of which will be a perseverance in medical discipline, though the paroxysms have ceased. Hence Celsus, "diem et horam diu meminisse oportet." But to you, gentlemen, I leave these remarks, to be confirmed or rejected by your observation. "Opinionum commenta delet dies natura judicia confirmat."

Dublin, 17th July, 1782.

Upon the Mechanical Treatment of Sterility. By Henry Oldham, M. D.

[From the Guy's Hospital Reports for October, 1849.]

"There have been three plans of treatment of a mechanical kind, for the cure of dysmenorrhœa and sterility, recommended and prac-

tised; and it is impossible for any one in practice in this city [London] as an obstetrician, and who reads the weekly and monthly journals, to be blind to the fact, that these means have of late been unsparingly and boldly employed. They consist, first, of the dilitation by metallic bougies or sponge tents, or by section of the os uteri internum and externum; secondly, of the removal of the front or back displacement of the womb by Dr. Simpson's uterine stem supporter; and, thirdly, by probing the Fallopian tubes. It is impossible for me to omit the notice of these expedients; although, if the womb be ascertained to be undersized, they would, I should hope, be abandoned in reference to it. No cutting, or dilating, or supporting, or probing, can make a small womb larger; and the amount of uterine stimulus which they would excite would be considered far too unimportant to justify their use. I know, however, that the characters of the reduced womb (if I may so call it) are not always appreciated in their entirety; and a source of error may arise from mistaking the natural and proportionate smallness of its orifice for a contraction to be removed mechanically. The anteversion I have noticed would by some be regarded as an efficient cause of sterility and dysmenorrhœa, and the uterine supporter be applied; while I suppose that Dr. Tyler Smith, if one or both these plans had been tried and failed, would *par voie d'exclusion*, consider it as coming within the undefined limits of tubal catheterism. The few remarks, however, which I shall make upon this subject, must be supposed to apply to the mechanical cure of sterility and dysmenorrhœa generally, without any strict application to these disorders as connected with the undeveloped womb.

"There are few cases which come before an obstetric practitioner which are so full of perplexity as those of sterility, especially where it is limited to those cases where the os and cervix, and body of the uterus, are free from any recognisable disease. Recent researches have afforded most valuable information on the composition of the male and female generative elements, and the physiology of generation; but our knowledge of the various causes by which impregnation is intercepted or prevented is very limited. One of these, no doubt, is any such partial or complete occlusion of the sexual canals as to prevent the transmission of the semen. Others are to be found in imperfectly developed ova within a shrunken ovary, or some defect in the semen, or a want of congruity between the two elements. These are subtle and concealed causes, difficult, and, with our present knowledge, almost impossible to detect, but of infinitely greater importance in their relation to primary sterility than the mechanical obstacles which have of late so exclusively engaged attention. It appears to me that the cases which justify the use of mechanical treatment require the greatest discrimination, not only on account of the facility with which they may be confounded with perfectly natural conditions, but also because these operations are not without danger. There is scarcely any amount of danger or pain that women will not go through to obtain

the prospect of becoming mothers. They are notoriously credulous as to success, and are the ready, and often the costly victims of empiricism; and I would venture to say that obstetricians ought to be nicely scrupulous in encouraging a plan of treatment of a very doubtful efficacy, and dangerous to life. I cannot imagine a position more overwhelmingly distressing to any right-minded man than to have been the means of destroying the life of a woman in the endeavour to remove sterility. And yet I am sure that, in these operations, a hazard is run quite disproportioned to the amount of good accomplished; and I shall recount two fatal cases which have come to my knowledge: and I cannot but infer that others of a similar kind have occurred, but have not been recorded side by side with those of a more fortunate issue.

"I feel great confidence in saying that the true congenital stricture of the os uteri, externum or internum, or of the Fallopian tubes, sufficient to prevent impregnation, is *very rarely* to be met with; and yet nothing is more easy, with the idea of a mechanical impediment in the mind, than to be self-persuaded into the belief that the natural orifice is too small. It is quite impossible to fix a standard size for the inlet to the womb. It has often happened to me to feel the virgin os uteri extremely small, and yet pregnancy to take place. The sound, too, is a very insecure guide to the measurement of the os internum; and I think it is a most reprehensible practice to allow a neuralgic dysmenorrhœa, whose seat I believe is generally in the ovary, to be the indication for this meddlesome practice. The only cases, in my opinion, in which a mechanical dysmenorrhœa with sterility can be said to exist, are those in which the tissue of the cervix is large and firm, and the os uteri is diminutive in comparison with the size of this body: a small, almost imperceptible, round aperture, perforating a bulky cervix. When the tissue of the cervix is not so condensed, but has its normal yielding feel, I doubt altogether the propriety of regarding even a very small os uteri as a strictured one. I have myself successfully treated by dilatation some cases of the kind above cited, but they are *very few*, compared with the large number which come under my care.

"I. I am indebted to my friend Dr. Golding Bird for the following instructive case. On April 7th, 1849, I received from him the uterus and appendages of a lady who had died from peritonitis, excited by attempts to cure sterility by mechanical dilatation, whose history, as furnished to me by Dr. Bird, is as follows, and with whose concurrence I publish it:—

"'A lady of dark complexion, aged 36; married several years, and never pregnant; resided in Jamaica. From youth she suffered intense dysmenorrhœa, and always had pains during sexual intercourse. She was nervous, hysterical, and excitable to the last degree, and was supposed to have suffered from every possible form of inflammation; these attacks obviously being neuralgic, so common in hysterical women. In June last, by the advice of her physician in Jamaica, she came to London for the express purpose of

having the os uteri dilated, which had already been attempted by wax dilators. The obstetric physician who was consulted in London coincided in this opinion, and thought the sterility and dysmenorrhœa depended on a stricture of the os uteri. He divided the os uteri with a cutting instrument, and introduced silver dilators. This produced horrible suffering; and although at first she fancied the pains of menstruation were rather better, they soon became as bad as ever, and she did not experience the slightest relief. She left off the treatment for a time, but was soon again inclined to resume it; and silver canulæ were passed into the os, and left there. Again she suffered frightfully. On Saturday, March 31st, a gentleman, the assistant of the physician, passed in another tube, but the distress was intolerable; and sickness and shivering coming on, she urgently begged her sister to try and remove it, which she succeeded in doing. Getting worse, a neighbouring surgeon was summoned, and he found her labouring under what he regarded as peritonitis masked by hysteria. She had scarcely any fever, collapse coming on almost immediately, and she continued sinking until Tuesday, when I (Dr. G. Bird) was summoned to her. I found her at her sister's residence at T—— Park, presenting almost the collapse of cholera: pulse 200, and a mere thread; distended abdomen; vomiting of black fluid; intense irritability. All treatment was useless, and she soon sunk. On examining the body, and raising the omentum, no appearance of disease of any kind was found above a line connecting the anterior superior spinous processes of the ilia. Below this line there was intense peritonitis: the convolutions of the intestines covered with butter-like lymph, and the pelvis filled with pus-like fluid: the right ovary and broad ligament covered with the same butter-like lymph, but so feebly adherent that it washed away by dipping it in water: the cavity of the uterus was filled with bloody mucus. There was no other disease.'

"The uterus and appendages were examined by Dr. Oldham.

"The uterus had been opened by a single oblique division of the anterior wall, directed from the cervix to the left angle of the womb. The uterus was larger than usual for the virgin: it was rounded on its anterior surface, and a bulging convexity of the posterior wall, which, with the general softness of the tissue, showed it to have been the seat of recent engorgement.

"The blood-vessels over the entire surface of the uterus and appendages were injected with blood, especially the fimbriated extremity of the tubes, the ovaries, the broad and round ligaments. On the anterior surface of the body of the uterus were two small projecting fibrous tumours, the size of a large and small pea: the serous investment of them was highly vascular, the blood-vessels rising over them just like the calyx of the ovarian ovum of the bird. There was a similar more flattened growth in the posterior wall.

"The divided surface of the anterior wall showed its proper structure to be much enlarged (it measured in the body eight lines);

the muscular structure was soft, and the veins large: a probe easily ran through them. The length of the united cavities was two inches and ten lines, the canal of the cervix being one inch five lines. The mucous membrane of the cavity of the body was soft, slightly raised, and of a vermilion hue. Agitation in the water was sufficient to loosen and separate it.

"At the os uteri internum there was a zone of highly injected blood-vessels, broken only at one point: the circumference of this aperture was eight lines. The os externum had a clean, smooth edge, without any break or mark of division: its circumference measured one inch one line. The cervix had its characteristic markings, and the glands were empty of mucus. On the right side of the divided cervix, which would have formed the front wall, the ribbings were stretched upwards, enlarging the mesh-like appearance; and towards the os internum some were lacerated transversely, and from this to the os externum the structure was more ragged than usual.

"*The Right Tube.*—The extremity of this tube was almost entirely closed as a congenital formation, the aperture being very small. When opened, the fimbriated end showed its characteristic rich folds of mucous membrane, which were much injected, and were covered with bloody mucus. The remaining two-thirds of the tube was apparently healthy, not vascular, and pervious throughout.

"The right ovary, which was almost covered with lymph, soft and large. There was a cyst large enough to hold a small nut on the uterine end of the ovary. The stroma was gorged with blood. There was only one puckered Graafian follicle: the surface of the ovary was thick and corrugated.

"The left ovary was irregular in its shape, a projecting mammillary portion coming out from its outer end. This, on being cut into, was hard and vascular, like the commencement of malignant disease: the ovarian tunic was thick and wrinkled; the stroma, vascular: a few remains of Graafian vesicles, with puckered tunics, and some clots of different colours, black and brownish.

"The left tube vascular at its fimbriæ, healthy in its mucous membrane, and its canal pervious throughout. This tube passed into the uterus more directly than its fellow, which was more curved. The veins healthy; arteries healthy; the right round ligament large and vascular; vagina healthy.

"It is unnecessary to comment at any length upon this case. It affords a most instructive example of the dangerous effects of dilatation, even in experienced hands, and the great caution with which it should be undertaken. It is important, too, as showing the difficulty of detecting the cause of sterility. I am sure that there was no kind of morbid contraction in this case, and that the os and cervix uteri, which were alone treated, had nothing whatever to do with the dysmenorrhœa or sterility. Both of these, no doubt, were dependent on the atrophy of the ovary; and the congenital obliteration of the end of the right tube would have been

sufficient to exclude the corresponding ovary from any share in the function of reproduction.

" II. Another presumed cause of sterility and dysmenorrhœa is, any deviation in the position of the uterus, and hence an indication for the cure of these disorders is to replace this organ, and hold it in its proper axis in the pelvis, by means of Dr. Simpson's uterine supporter. Dr. Rigby and others have related cases of this kind. It is not necessary for me to reiterate the objections which I urged in the last Number of the Reports upon this subject, but I cannot avoid relating the following case, which more than confirms my opinion of the dangers which may arise from this supporter. I am indebted to Mr. Bransby Cooper for this case, which, like the preceding one, ended fatally; and which he has given me his permission to publish.

" A young married lady, of great personal attractions, was attended by Mr. Cooper, for a very painful fissure in the anus, which he divided and speedily cured. She then spoke to him of what had been to her a very distressing social trouble, namely, her sterility, which she associated with a perfect indifference to sexual intercourse. Mr. Cooper examined the sexual organs; but as he did not discover any defect which could be remedied by surgery, he referred her to a physician-accoucheur. This gentleman detected the uterus in a retroverted state, which he looked upon as the probable cause of the sterility. For the cure of this displacement, he introduced a uterine stem supporter, which set up peritonitis, of which she died in three days.

" It is much to be lamented that the warning which such a case as this imperatively suggests should not have been published by the obstetric physician in whose practice it occurred. My own opinion is, that mere displacement forwards or backwards, if the uterus be not diseased, does not commonly cause sterility; and I cannot but characterize the practice of fixing the womb in a definite position by means of a stem supporter, as rash and hazardous, causing severe irritation and pain, and even death, to the patient, with, at the best, a very questionable amount of ultimate good. The anteversion or retroversion of a small uterus, without other complications, does not, in my experience, occasion any great distress; and it is far better to leave it alone, and improve its tissue with the rest of the organs of the body, than to prop it up for a time under the feeble pretence of curing it.

" III. Dr. T. Smith's adventure of catheterizing the Fallopian tubes I know of only from his papers. I have the instrument by me, but at present I have no intention of using it."

MEMOIR OF BRYAN HIGGINS, M. D.,

AND OF

WILLIAM HIGGINS,

PROFESSOR OF CHEMISTRY TO THE ROYAL DUBLIN SOCIETY;

WITH A SHORT NOTICE OF IRISH CHEMISTS AND THE STATE OF CHEMISTRY IN IRELAND BEFORE THE YEAR 1800.

By WILLIAM K. SULLIVAN,

FIRST CHEMICAL ASSISTANT TO THE MUSEUM OF IRISH INDUSTRY, AND CHEMIST TO THE ROYAL AGRICULTURAL SOCIETY.

To many persons the present essay may appear useless;—they may ask, Why take any trouble about such unimportant memoirs as the mass of those which I am about to mention. What has Ireland added to chemistry? I answer, that the history of science is not made up of great discoveries alone; that the more obscure workers have a right to be remembered with honour, as the unhewn stone helps to make part of a building as well as the ornamental column. But, independently of its reference to the history of chemistry in general, such an essay as the present is of considerable value in a national point of view, in showing the circumstances which tend to advance or to retard knowledge, and hence the way to remove the causes unfavourable to progress. It is also a species of barometer for indicating the influence of governments, of political changes, and of sectarian dissensions, upon the activity of the human mind. In Ireland this is remarkably exemplified, as the reader will perceive who compares the dates of our political crises with those of the flourishing periods of chemistry. Hitherto our scientific men have, with the exception of a few medical ones, and one or two who were connected with literature or politics, been altogether neglected. We have, it is true, very little to boast of; but a glance at the few things which even I have been able to collect, will, I am sure, convince all that, though we cannot lay claim to many brilliant discoveries, it has not been from want of an earnest desire to keep pace with other countries, and that the record of many of our societies show that, under better circumstances, we might have held an honourable rank in science in Europe. I believe that no country has made so many struggles to advance in knowledge, under similar disadvantages, as Ireland has; and to those who know the history of this country, it is unnecessary to say why these efforts were unsuccessful.

The task which I have had to perform was one by no means easy, owing to the difficulty of distinguishing who were Irishmen and who were not. In the case of men of great eminence this did not often occur, but even among such there have been too many examples of that rather Irish vice of discarding their country,—a crime which a Scotchman looks upon with horror, although he may be the warm-

est advocate of England; and he is right, for whatever opinion we may entertain individually, as to the means of advancing the country, there is one thing which all people may be justly proud of, a separate literary and scientific existence. I have considered as Irishmen (a very few excepted), only such as spent a portion of their mature age in the country, and of course I have made no distinction between those born in Ireland and those who, though born in another country, may have brought their talents amongst us. It is probable that I have not been able to distinguish all the names which should be included, but I may be permitted to hope that such deficiencies will be, at some future time, filled up, according as people learn the value of such records.

That the early Irish had some knowledge of alchemy there can be no doubt, for we find among the works attributed to the celebrated John Duns Scotus, several essays on that subject, which must have introduced the dreams of these visionaries into Ireland(*a*). And though our records are silent on the subject, we find, so early as the middle of the sixteenth century, several Irishmen having considerable reputation as adepts in the mystic science. The best known of these was Edward Kelly. His real name was Talbot, and having, when in Ireland, forged several public documents, he fled to Wales, and from thence to London, where he became acquainted with the well-known Dr. Dee, whose reputation he helped, and with whom he went to Prague, to the court of Rodolph II., who was a great patron of alchemy. He there converted, it is said, several times, mercury into gold; and as this was the first real proof which the Emperor had of the truth of the hermetic art, he ennobled Kelly. But his prosperity soon came to an end, for the Emperor took a fancy to know the secret of the philosopher's stone himself, and in order to force it from Kelly he cast him into prison, in endeavouring to escape from which he broke his leg, and soon afterwards died(*b*). Another Irishman, of the name of Butler(*c*), enjoyed considerable reputation for his skill in metallurgy and in alchemy, which he is said to have acquired from the Arabs, by whom he was made prisoner and sold as a slave. He died in 1625. But it is only from the middle of the seventeenth century that we can date the commencement of the study of experimental science in Ireland. The continual state of warfare in which the country was always plunged

(*a*) Borellius, quoted in Gmelin's *Geschichte der Chemie*, gives the following of these tracts:—1. Dominus vobiscum; 2. Tractatus ad Album et Rubrum; 3. Tractatus ad Regem Angliæ; 4. Opus magnum, secundum Intentionum omnium Philosophorum verissimum; 5. De Veritate et Virtute Lapidis Philosophici.

(*b*) Two works were published by him, viz.: 1. *Tractatus Egregii de Lapide Philosophorum cum Theatro Astronomiæ Terrestris in Gratias Filiorum Hermetis in Lucem.* Editi a Io. Langio. Hamburg, 1676. 8vo. It was also translated into German. 2. *Fragmenta a Cambachio edita.* Geism., 1647. 12mo.

(*c*) Mentioned by Van Helmont, *Opera omnia apud Elzevir*, 1648, p. 582.

was much more fatal to the fine arts and to experimental science than to the study of theology or metaphysics. Add to this that the insular position of Ireland, at all times more or less unfavourable to the spread of ideas from without, completely shut us out from benefiting by discoveries made on the Continent, or from being affected by the great fermentation of mind which began to agitate Europe after the Crusades, and which had an extraordinary influence on the progress of all the natural sciences.

This state of things also prevented the growth of manufactures and the cultivation of the arts, the parents of experimental science, especially of chemistry. We have thus sustained an irreparable loss, for at present we have not only to create the manufactures which should have been the slow growth of years, but we have to induce, at the same time, a taste for experimental science, which would have, under favourable circumstances, accompanied this slow growth, had such taken place. The first man connected with Ireland who did anything of importance in chemistry appears to have been Bernard Connor, who was for some time physician to the King of Poland at the end of the seventeenth century(*a*). He is the first writer with whom I am acquainted who appears to have seen the importance of the application of chemistry to physiology and pathology; he even mentions the variation of the quantity of fibrine, as well as of the entire clot, in several diseases, and points out many other facts which, for that time, were very curious(*b*). Like most of our great men, however, he lived principally on the Continent, and consequently had very little influence in furthering a spirit of inquiry at home. A country gains very little intrinsically from the birth of a great man, unless he remains there, publishes his labours there, and, above all, communicates his ideas, his spirit, to those around him. The greatest blessing which can be bestowed on a country is the birth of a great man, and the greatest misfortune which it can sustain is the loss of one; and the latter has been the lot of our unfortunate country, her illustrious sons belonging more properly to the history of other countries than to our own. The great Robert Boyle is an example of this; though an Irishman by birth and connexions, the influence of his genius was shed on England for the greater part of his life. But happily he did not entirely forget his native land; a ray of his influence fell on two men whose names are indissolubly connected with the true interests of Ireland,—the two Molyneauxs,—through whom the first era of our modern progress commenced. In the year 1683, William Moly-

(*a*) A compendious Plan of the Body of Physic. Oxon., 1697. *Dissertationes Medico-Physicæ*. Oxon. 1695–8.

(*b*) At page 21 of vol. xix. of the Philosophical Transactions we find a paper by him under the title, "An Account of an extraordinary Human Skeleton whose Vertebrae of the Back, the Ribs, and the several Bones down to the Os Sacrum, were all firmly united into one solid Bone, without Jointing or Cartilage."

neaux founded the Dublin Philosophical Society, in which Boyle, then in the height of his fame, took a great interest, and principally through him the Royal Society offered to publish their proceedings, as they were not in a condition to do so themselves. I shall not enter into the history of this Society, as it has already been very fully given in the Editor's Preface prefixed to the first Number of the present series of this Journal, except in so far as it has reference to the subject of Chemistry, to which its members paid considerable attention. They appear to have had even a chemical laboratory, as is evident from a letter from William Molyneaux to his brother Thomas, then residing in Leyden. This laboratory was constructed under the direction of Dr. Mullen, and was situated in a place called Crow's Nest, probably the site of the present School of Medicine of the Apothecaries' Hall in Cecilia-street.

The papers read at the Society appear to have been quite equal to the generality of the memoirs read at the societies then in existence elsewhere; and though no brilliant memoir appears among them, there are a great many nice observations, which show that the men who wrote them had a considerable knowledge of the subjects treated of, and in many cases very comprehensive notions of the sciences. The persons who contributed the chemical papers were William Molyneaux, Lord Mountjoy, Sir William Petty, Richard Bulkely, Mr. Patterson, Dr. Houlaghan, Mr. King, Dr. (afterwards Sir Patrick) Dun, Dr. Silvius, and, above all, Dr. Allen Mullen, who appears to have been a very superior man. It is unnecessary to give a list of the papers read, as they have been already given in the Preface above alluded to(*a*).

This Society, which gave so much promise, and which would, no doubt, have added considerably to the domain of chemistry, had existed only during three or four years, when the civil war broke out, and put an end to all further improvement. It was, however, again revived in 1693, but only for a very short time. Another attempt was made to establish it in 1707, when several papers were read, of

(*a*) The labours of some of the members of this Society were not confined to the papers read before it. Thus we find that Dr. Edward Smith published, in 1695, an examination of a soapy earth from Smyrna, with the process there followed for making use of it as soap (Phil. Trans. vol. xix. p. 228), in addition to his essay on the petrifying nature of the water of Lough Neagh, which was read to the Society. Dr. Moulin or Mullin, besides the papers enumerated in the Editor's Preface, published the following:—"An Experiment of the Injection of Mercury into the Blood, and its ill Effects on the Lungs" (Phil. Trans. vol. xvii p. 486); "Some Experiments on a black shining Sand brought from Virginia, supposed to contain Iron (Titanate of Iron)" (Phil. Trans. vol. xvii. p. 624); "Anatomical Observations on the Heads of Fowls" (Phil. Trans. vol. xvii. p. 711); "Analysis of a Water from near Canterbury" (Phil. Trans., vol. xxv. No. 312, 1706–7),—from this latter paper it would appear that he left Ireland and settled near Canterbury; and a paper on the Anatomy of the Elephant, Dublin, 1682, one of the earliest on record.

which two were chemical, namely, one by Thomas Molyneaux, on the Mines and Minerals within the kingdom of Ireland,—the first notice of the kind which appears to have been made,—and the other by William Molyneaux, on Mercurial Phosphorus. But the country was reduced to such a condition that science, though supported by the energy and patriotism of the Molyneauxs, could not obtain an asylum, even with a select few, in the capital, and the Society, after this second resuscitation, ceased to exist(*a*).

After the Philosophical Society had ceased to exist, a long interval occurred before attention was again directed to science. In the year 1731, however, the Royal Dublin Society was founded, and although chemistry did not occupy much of its attention at that time, the spirit of inquiry which led to its establishment extended itself also to chemistry, for we find that in the very same year Dr. Thomas Madden showed the poisonous and acid nature of common laurel water(*b*); and in the year 1739 Dr. John Rutty wrote a dissertation on the same subject. About the year 1737 Boyle Godfrey, whose epitaph was given in the twelfth Number of this Journal, published an excellent paper on the watery extract of opium, in which he accurately pointed out many of its properties(*c*); he also wrote an essay on artificial bole, with its use in making transparent slates, and an analysis of a water from near West Ashton(*d*). It is remarkable that Trinity College should have given, even up to a very late period, so little encouragement to experimental science; for we find that nearly all the papers on chemistry, with few exceptions, written during the period of which we write, were not only published in England or elsewhere,—a matter not very surprising, considering the state of the country,—but were the productions of men who were educated either at Edinburgh or Paris. Boyle Godfrey is an example of the former, and Andrew Cantwell of the latter. Cantwell published very many chemical essays, among others, one, in connexion with a Frenchman named Hazon, on the subject which occupied so much attention at that time, the cure of the stone by alkalies, under the title of *Experimenta in Calculi Acetate et Temperamenta Ægrotantis Remedium alcalino Saponaceum Anglicum*, Paris, 1742, 4to. He wrote many other papers, principally

(*a*) An idea may be formed of the state of the country at the end of the seventeenth century by a curious passage in the *Cours de Chimie* of Lemery, relative to the *usnea barbata*, which was then much employed as a medicine in epileptic fits. It was considered doubly valuable if it had grown on a human skull, especially of those executed; and as that from Ireland possessed this great merit, it became an *article of commerce!* for the reason which Lemery thus states, "Car en ce pays-la on laisse les hommes qu'on a pendus, attachés à des poteaux dans la campagne, jusqu'à ce qu'ils tombent par piéces; os. pendant ce temps-là la chair et les membranes de la tête s'etant consumées, cette mousse naît sur le Crâne."—*Cours de Chimie*, p. 856,—1675.

(*b*) Phil. Trans. vol. xli. p. 2, No. 461, 1740.

(*c*) Phil. Trans. vol. xxxvii. p. 84.

(*d*) Medical Essays and Observations by a Society of Physicians in Edinburgh, vol. v. p. 2.

on medical subjects, five of which are to be found in the Philosophical Transactions. About the same time Bond and Henry described accurately the petrifying qualities of Lough Neagh(*a*), a subject which appears to have excited great attention at that time, judging from the number of papers published on it. Even the celebrated Berkeley has left some remarks on it(*b*). Bond and Henry appear to have always taken up the same subject, for we find two papers by them, giving an account of some experiments on the copper springs of Wicklow, in the Philosophical Transactions(*c*).

The spirit of inquiry rapidly increased, and was finally concentrated in the Medico-Philosophical Society, which was founded in 1756, and which was the most useful and active society which existed in Ireland during the last century(*d*). Its papers were generally medical, but it also paid considerable attention to physics and chemistry. Among its most active chemical members were Dr. Macbride, Mr. Bride, an apothecary, who appears to have done a great deal for pharmacy in Ireland, Dr. Barry, Dr. Charles Smith, Dr. Purcell, Dr. Rutty, and some others. The man of most ability among them was, unquestionably, Dr. Macbride. Dr. Rutty was the most active and persevering; he had always a paper of some kind for each meeting, but, with few exceptions, they are scarcely worth mentioning, and are very deficient in philosophical ideas.

As very little is known of this Society, except the notices which Mr. Wilde has from time to time brought forward in this Journal, though it occupies a very high place in the history of scientific progress in Ireland, particularly in that of medicine, for it may be said to be the foundation of our Irish School of Medicine, it may not be uninteresting to give a short account of the chemical papers which were read before it, in order to show how rapid was the progress then taking place in Ireland, as exhibited by the spirit of scientific research, which, in a few years afterwards, led to the establishment of an Irish Parliament.

Shortly after its foundation, Dr. Charles Smith, well known by his Histories of Cork and Waterford, works which, by the way, were undertaken at the suggestion of the Society, and the publication of which was assisted by its funds, read a preliminary discourse in which he pointed out the value of such a Society, the necessity for the establishment of one in Ireland, and on the then state of affairs in Ireland, from which I shall give an extract, illustrative of the latter point, and which places the men who founded such a body, under such difficulties, in a very favourable light.

"Ireland has made but few attempts to add one to those illustrious bodies which have been long since founded in every civilized

(*a*) Phil. Trans., vol. xlvii.; vol. xlviii. p. 1, 181; No. 84, p. 500.
(*b*) Phil. Trans., vol. xliv. p. 305.
(*c*) Bond, vol. xlviii. p. 181; and Henry, vol. xlvii. p. 500.
(*d*) See the Editor's account of this Society and its Memoirs in his Preface to the present Series of this Journal, vol. i. p. xxviii. See also Dr. Aquilla Smith's communications on the history of Irish medicine, referred to therein.

state of Europe; for even the Russians, a people but the other day reclaimed, by a great prince, from barbarism, have stepped before us, not only in forming the Royal Academy of St. Petersburgh, but also in publishing Philosophical Transactions which might do honour to any other more civilized nation.

"It might be hoped that the present institution, how crude soever it may now appear in its infant state, might serve as a spark to kindle such design in this kingdom, when a more favourable opportunity presents itself. But, to speak the truth, none of the members are so sanguine as to flatter themselves with ever seeing so agreeable a prospect. The present times are remarkably distinguished for an invidious turn of mind in most persons capable of prosecuting such an undertaking, and, sorry are we to add, by an utter contempt and disregard of every one whose industry or abilities might appear superior to their own. These men, by an abject flattery, a studious devotion to the low arts of party or faction, and many other mean ways of distinguishing themselves, endeavour to engross the confidence and protection of men in power, who are themselves entirely occupied, and have their time taken up, with every method of aggrandizing their families and supporting luxury (now grown to an immoderate height), even at the expense of all that is dear to the well-wisher of his country. Much more might be said on this head consistent with integrity, but this slight sketch of things must suffice; it is neither visionary nor false, and consequently the hopes of either capable or ingenuous persons who might mutually agree to support each other in carrying on a scheme of this kind, nor a sufficient number of people in power who might protect and encourage it is hardly at this time to be expected."

The hopes which were visionary to Dr. Smith at that time were, however, realized, but only for a moment, during the first years of enthusiasm and progress which followed the establishment of Irish independence. The spark, however, produced no flame; it was almost completely extinguished by the unheard-of corruption of the Irish Parliament.

During the year 1756, Dr. Rutty(*a*) read a few insignificant notices on mineral waters, but the first chemical paper really deserving of notice was read by him on August 3, 1757. In this paper he pointed out the difference between the varieties of tannin which produce green and black precipitates with protosulphate of iron. In November, 1757, Rutty also showed that alkaline salts attenuate the blood, that is, diminish the blood globules, and soften flesh.

During the year 1758, Dr. Smith read some ingenious observations on the cementing principle of sandstones; he, however, attributed this effect to the presence of vitriolic or sulphuric acid, carbonic acid not being then well known; and Dr. Rutty read a paper on some experiments made on woman's, cow's, goat's, ass's, and sheep's milk, which was afterwards published in full under the title of

(*a*) See Rutty's Memoir in the sixth Number of this Journal.

"Analysis of Milk, and the different Species thereof, 1762," in which he showed the coagulability of woman's milk by rennet, pointing out at the same time the comparatively small amount of caseine which it contains.

Several chemical papers were read during the year 1759; among others, one by Dr. Rutty on the bastard alkanet (*anchusa tinctoria*), in which he pointed out the solubility of its colouring matter in oils; Dr. Barry, on salts discovered in the urine of persons ill of fever, which he stated were like nitrate of potash, viz., hexagonal prisms with pyramidal bases, and some cubical like the marine salt; and three by Mr. Bride, on the adulterations of saltpetre; on the gum *rubr. gambiensis*,—a pharmaceutical paper quite equal to those published in other countries at that time; and on *mercurius dulcis*, or calomel, containing some excellent observations.

The papers read during the year 1760 were by no means equal in value to those previously mentioned; the best was one by Mr. Bride, entitled, "A Chemical Remark on the last Edition of Quiney's Dispensatory," in which he, as well as Dr. C. Smith, pointed out the difference between the action of potash and ammonia on salts of mercury.

In 1761, Dr. W. Redmond read some chemical and metallurgical observations and experiments upon antimony, containing some excellent remarks on the action of alkalies on the sulphurets of antimony. This essay was published under the title, "The Principles and Constituents of Antimony: London, 1762. 8vo."

In 1762, Dr. Rutty communicated the result of an analysis of a liquid taken from a dropsical patient, in which he showed the alkalinity of the liquid, and the precipitation of albumen by heat, and by corrosive sublimate, and several other tests.

Dr. Macbride(*a*) read an account of some experiments showing the power of different acids to sweeten putrefied animal substance; as also the antiseptic quality of the vapour set free from substances during the first stage of fermentation.

In some subsequent papers Dr. Macbride showed that lime is precipitated from lime-water, by the gas set free during fermentation and putrefaction; and this observation he applied to account for putrefaction. He also showed the nature of the reaction which occurs when carbonate of potash is added to solutions containing lime. In these papers he clearly showed the existence of fixed air or carbonic acid in limestone, but accounts for the solubility of the latter in water by its being deprived of this fixed air and converted into the same condition in which it exists in lime-water; this was also the opinion of Cavendish, showing that they were unacquainted with the existence of bicarbonates.

In 1764, Dr. Macbride exhibited some drachms of a volatile alkaline spirit, obtained by distillation at a very gentle heat from putrid blood. This substance he showed to possess all the proper-

(*a*) See his Memoir in No. V. of this Journal.

ties of ammonia, an opinion quite contrary to that then generally received. He also obtained it from bile, meat, &c.

Dr. Macbride published in the same year, in a collected form, the results of all the experiments which he had communicated to the Society, under the title "Experimental Essays on the following Subjects:—1. On the Fermentation of alimentary Mixtures. 2. On the Nature and Properties of Fixed Air. 3. On the respective Powers and Manners of Acting of the different Kinds of Antiseptics. 4. On the Scurvy; with a Proposal for trying new Methods to prevent or cure the same at Sea. 5. On the dissolvent Power of Quicklime." It was translated into German by Conrad Rahn, under the title of "Durch Erfahrungen erläuterte Versuche, &c.," Zürich, 1766; and into French by M. Abbadie, under that of "Essais d'Expériences sur la Fermentation des Mélanges alimentaires sur la Nature et les Propriétés de l'Air fixe, &c.," Paris, 1766.

This was, for its time, a very remarkable work, and has gained for its author a respectable place in the history of chemistry. His principal merit consisted in perceiving the value of Dr. Black's discovery of fixed air or carbonic acid, and fixing the attention of physicians and chemists on the important part which it plays in many processes of animal and vegetable life. Thus he considers that all bodies in nature derive their force, their consistence, and the cohesion of their parts, from the fixed air which they contain, and when deprived of it by any means, the molecules no longer adhere together; hence results, according to him, putrefaction in those bodies which are capable of undergoing it, and those which are not fall to powder, as lime does when dissolved in water. He examined very carefully the production of carbonic acid during the process of the fermentation and putrefaction of animal and vegetable substances, the latter bodies containing, according to him, more of it than the former. According to his views, these two phenomena depend, in a great measure, on the disengagement of this gas, and consequently cease when it ceases to be evolved. In the same manner he accounted for the action of carbonic acid in arresting putrefaction, which he was the first to observe, by giving back the fixed air which the body had lost. On this view was founded his treatment of scorbutus, which disease he defined to be "putrid disease, from the want of this bond and cement of bodies," by liquids such as beer, that contain fixed air. He explained the action of caustic lime in furthering putrefaction by its affinity for fixed air, which it drew from the body with which it was in contact. He also pointed out the existence of carbonic acid in fresh-drawn blood, and also in small quantity in air which he showed to be entirely different from it.

We have just mentioned his valuable observation with regard to the existence of volatile alkali, or ammonia, in the products of putrefaction, and in the products of the distillation, *per se*, of various animal substances.

Dr. Macbride did not confine himself to scientific chemistry, for

in the Philosophical Transactions we find a paper of his on an improved method of tanning leather (vol. lxviii. part i., p. 111, 1778), being, we regret to say, one of the very few practical papers by Irishmen which we have been able to find. This process appears to have been practised in Dublin, and other parts of Ireland, under his direction, and was originally communicated to the Dublin Society. It consisted in extracting the bark by means of lime-water, the skin having been prepared in the usual manner. He also recommended sulphuric acid instead of the sour liquid obtained from animal and vegetable matter, for opening the pores of hides for sole leather, and thickening, or *raising* them, as the tanners say.

In April, 1765, Dr. Rutty described the urine of a man having diabetes, in which he mentions the extract as having the smell of burned sugar, and a perfectly sweet taste. It does not, however, appear that he considered it as such. I am not aware of the fact having been noticed earlier.

Between this period and October, 1767, there were several papers read, but none of them of any great importance, being principally notices of things already observed. In that month Mr. Cleghorn communicated, on the part of Dr. Black, a method of preparing the *cuprum ammoniacali* (*cuprum ammoniatum* of the Pharmacopœia), which was found useful at that time in cases of epilepsy. I mention this paper not so much on account of its intrinsic merits, but rather to show that although Dr. Black had ceased to be an Irish reident, he, like Robert Boyle, still continued to cast a ray of his influence on his native land, for that he was born in Ireland there can now be no doubt. But, as we have already said, it is not the country of his birth which can be proud of a great man, but the country which enjoys the influence of his genius; Scotland is therefore fully entitled to claim Black as one of her sons, but we may still be proud that he was not entirely lost to us.

From this period until 1766, very few chemical facts were communicated to the Society. Dr. Rutty, however, continued to make observations on his favourite subject, mineral waters, and on the phlogiston theory, which then occupied the attention of the whole of Europe. We must not, however, conclude that the Society had diminished in activity, for its journals for these years are full of valuable medical observations. In January, 1766, Mr. Bride read a paper "On the Fermentation of Corn, and the Distillation of Corn Spirits," which was truly admirable for the time. In this paper he very properly points out that the spirit is derived from the sugar, and that the sugar which is perceptible in the commencement of the year in the juices of plants, disappears in the autumn, and is replaced by farina, and that the process of malting consists in an incipient vegetation in which this sugar is formed. He states that there can be no doubt but that by malting corn a crystallizable sugar may be obtained. He also alludes to the fact that malted corn

is capable of converting raw corn into the same state as itself. In the same year, Dr. Purcell read a very excellent paper on a limestone gravel, in which he pointed out the mode which he adopted for its analysis. This is one of the best essays on this subject, of that period, which we have ever seen; indeed some of the observations contained in it are far in advance of many articles of more pretension which appear in the journals of the present day.

Nothing of any moment, connected with chemistry, was communicated to the Society until November, 1783, when Mr. Bride read a very ingenious paper on Manures; and in January, 1784, Dr. Perceval showed that water boiled at a higher temperature in glass than in metal vessels. The last meeting of the Society, of which we have any record, took place on the 7th of October, 1784.

This Society seems to have been very well managed, and to have been quite adapted to the wants of the time. Specimens of interesting plants, of substances used in medicine, &c., were usually exhibited at its meetings; the latter, particularly, by Mr. Bride. The members paid some attention to the microscope, and experiments were often exhibited at the meetings. The following entry is recorded in the memoirs: "January 18, 1759.—This evening the Society met at the Rev. Mr. Jones's, who exhibited some magnetical experiments before them, and also a view of the crystallization of the solution of sal-ammoniac and other salts in the microscope." All the new books published on the subjects which engaged the attention of the Society were noticed, and sometimes extracts from them were read to the Society.

Up to the time of his death, Dr. Rutty regularly presented to the Society remarks on the weather, with tables of the variation of the thermometer and of the fall of rain, which, although not very accurate, are still very valuable, and show that the importance of meteorology was fully appreciated by the Society.

The Medico-Philosophical Society did not, however, include among its members all the workers in science then in Ireland. Among the Irishmen not members of the Society, who turned their attention to chemistry, we may mention Thomas Lane, a native of the south of Ireland, who practised for some time in London, but also resided in Ireland. He showed, in the year 1769, the solubility of iron in water impregnated with carbonic acid(*a*). He also invented the form of electrometer known as Lane's Discharger(*b*). We also find him writing on the great subject of that quarter of a century, the stone, for which he proposed as a solvent lime-water(*c*); and in 1791 he published a chemical examination of urine(*d*). Owing to the want of the means of obtaining education at home during the whole of the eighteenth century, the Roman Catholic por-

(*a*) Phil. Trans., vol. lix. p. 1; No. 30, p. 216.
(*b*) Phil. Trans., vol. lvii. p. 451.
(*c*) Medical Transactions by the College of Physicians in London, vol. i., London, 1768.
(*d*) Phil. Trans., vol. lxxxi. p. 2.

tion of the young men of talent were compelled to seek it in foreign universities; but unfortunately this class, which had thus such opportunities of acquiring the continental methods of investigation, were compelled on their return home to renounce science, and to attend to the engrossing pursuits of the profession to acquire a knowledge of which they had gone abroad. At that time, also, there was no field open to them of a scientific character; and from the paucity of physicians belonging to their religious denomination at that time, and the poverty of the people, the whole of their time was completely occupied. As to the Roman Catholic priests of that period, they were unfortunately all educated in foreign colleges where the whole course of study consisted in metaphysics, &c., and where experimental science was little attended to; still we find a few of that class who deserve to be mentioned, if it was only for their rarity. James O'Reilly, for some time physician to one of the Austrian princes, for instance, published an excellent analysis, for the time, of the mineral water of Steckniz, in the year 1766(*a*).

Dr. Rutty, in addition to the papers which he read to the Medico-philosophical Society, communicated five papers to the Royal Society, viz.:—1. "Account of the Copper Springs lately discovered in Pennsylvania"(*b*). 2. "On Sulphur in Water"(*c*). 3. "Of the Vitriolic Waters of Amlwch in the Isle of Anglesey"(*d*). 4. "Occasional Remarks on the Hartfell Spas, and their Comparison with other Waters of the same Class"(*e*); and 5. "On the Poison of Laurel Water," already mentioned. He also published a general work on mineral waters, entitled, "A methodical Synopsis of Mineral Waters, comprehending the most celebrated medicinal Waters, both cold and hot, of Great Britain, Ireland, France, Germany, and Italy, and several other Parts of the World." London, 1757-8 to 1761. 4to. This work produced a controversy between him and the celebrated Lucas, who published an answer to Rutty, entitled, "An Analysis of Dr. Rutty's Methodical Synopsis of Mineral Waters." London, 1758. 8vo. The subject of mineral waters was as much a favourite with Lucas as with Rutty, for previous to the controversy he had published a work on the subject, under the title of "An Essay on Waters, in three Parts, treating of simple Waters, of cold medicated Waters, of natural Baths,"—London, vols. i.–iii. 1756 to 1758,—which was translated into German by I. E. Zeiher, under the title of "*Versuch von Wassern, Altenburg;*" vol. i. 1767; vol. ii. 1768; vol. iii. 1769. 8vo. A work very far superior to anything of Rutty's. The controversy was principally on the subject of the presence of sulphur in water. According to Rutty, it was to be found every-

(*a*) *Tractatus de Ortu ac indole contentis, viribus Medicis ac debito usu Aquarum Mineralium.* Stecknizensium Ponti, 1766. 8vo.
(*b*) Phil. Trans., vol. xlix. p. 2, 1756.
(*c*) Phil. Trans., vol. li. p. 1; No. 28, p. 275.
(*d*) Phil. Trans., part ii. No. 45, p. 470.
(*e*) Phil. Trans., vol. li. p. 470.

where; according to Lucas, the principle impregnating all waters called sulphurous was phlogiston, which he describes as a simple elementary body, the cause of inflammability, colours, and odours in bodies, and that it is one and the same in the subjects of the three kingdoms of nature. Rutty was in some measure right, but only accidentally so, for his Synopsis is full of errors of the most glaring kind. Lucas, on the other hand, was misled by the phlogiston theory of Stahl, then in the height of its fame. In his "Cursory Examination of the Methodical Synopsis of Mineral Waters, and of the Argument of Sulphur or no Sulphur," &c.,—one of the ablest controversial pamphlets we have ever read,—as well as in his "Essay on Waters," he displays so much clear-sightedness and knowledge of the then state of chemistry, that we cannot help regarding him as one of the ablest chemists of that day in Ireland, and at the same time regretting that other pursuits led him away from a science which he might have enriched by his labours. It is unnecessary to mention the other works of Rutty, as they have been already enumerated in the notice of his life given in the Number of this Journal already referred to; but in taking leave of this estimable man, we cannot help remarking, little as the intrinsic value is which we attach to his labours, they had a powerful influence on this country in his day, and that such a man is always an invaluable member of a society, by setting an example of perseverance and industry(*a*).

We have now arrived at the period in which the Higginses lived; but before entering upon their labours it will be necessary to notice the establishment of the Royal Irish Academy, and some of the fruits of the first years of its existence, as well as the general progress in Ireland during the same period.

The activity of the Medico-Philosophical Society had diminished very much towards the end of 1780; but the spirit of research had passed beyond it, and a number of new societies were established; it is even said that a chemical club or society existed for some time. All, however, merged into the Royal Irish Academy, which was established in the very same year as Irish independence, and chartered in 1786.

The Society from which the Academy arose was formed from the union of two bodies, the one called the Paleosophers, having for its object the investigation of antiquities, and the other the Neosophers, for the cultivation of science and modern literature. It consisted of an indefinite number of members, most of them be-

(*a*) We may also mention here James Simon, although not, properly speaking, a chemist. I do not know anything of him, except that he published the following papers in the Philosophical Transactions: "Case of the Bones of a Fœtus voided per Anum," (vol. xliii. p. 529); "Account of some Fossils found in Ireland" (vol. xliii.); "On the Petrifactions of Lough Neagh" (vol. xliv. 305); "Account of the Barometer and State of the Weather at Dublin, from March 7, 1752, to February 28, 1753," (vol. xlviii. p. 305); "Journal of the Weather at Dublin, 1753, 1754, and 1755," (vol. xlix. p. 759), by far the most correct record of that time as far as it goes.

longing to the University, who at weekly meetings read essays in turn, but, "anxious to make their labours redound to the honour and advantage of their country, they formed a plan more extensive, and admitting such additional names only as might add dignity to their new institution, or by their publications had given sure ground to hope advantage from their labours, became the founders of the Royal Irish Academy"(*a*).

The first President was the Earl of Charlemont, who was succeeded in the year 1799 by Richard Kirwan. The first volume of Transactions appeared in 1787, but contained no chemical paper. Prefixed to it is a preface by the Rev. R. Burrowes, A. M., F. T. C. D., from which we cannot help making a few extracts, in order to show the spirit which animated the founders of the Academy, and also how completely the causes of our backward condition have been at all times understood, and yet how stereotyped that condition has become, and how little has as yet been done to change it. The following passage is quite as applicable to-day as it was in 1782:

"To the several advantages which Europe has within these latter centuries experienced from the cultivation of science and polite literature, this kingdom unfortunately has remained in a great measure a stranger. As no Irishman's partiality will deny this, so no man's prejudice should be suffered to make it an occasion of illiberal imputation on the capacity of Irishmen, while in the state of the country so many local peculiarities may be found fully sufficient to account for it. The important changes which took place in the Government upon the invasion by Henry II., were not carried on with so little disturbance as to permit the nation to apply itself immediately to the peaceful employments of literary inquiry; nor could it reasonably be presumed that two classes of inhabitants, entirely dissimilar in their inclinations and habits, and afterwards more widely separated by a difference in religion, should be readily prevailed on to lay aside their mutual enmity, and unite in the pursuit of speculative science. The connexion of this kingdom with England, instead of teaching Ireland the many valuable acquisitions of English industry, tended rather to entice away its men of genius to a country in which, as learning was more fashionable, its professors might be certain of enjoying more at ease the advantages of rational communication, and of receiving more ample encouragement. Its natural situation, remote from the line of immediate intercourse between any two more civilized nations, removed it also from all acquaintance with foreign improvement; and its want of political importance banished from it all those whose wealth and ambition might have introduced practical science, afforded a liberal patronage to ingenuity, and raised their country to dignity, to opulence, and to reputation.

"Such are the several causes which fatally conspired to detain this kingdom for a series of years in a state of comparative ignorance

(*a*) Preface to the first volume of the Transactions, R. I. A.

and inferiority, to counteract its natural advantages, and to derogate from its national character; and to these it is owing that, while its sons became illustrious abroad for enterprise and for ability, their country should yet have remained neglected, and its inhabitants poor, inactive, and unenlightened. But the influence of many of these causes has in a considerable degree weakened, and peculiar circumstances have now given to Ireland an importance in the political scale, which habits of well-directed industry alone can establish and maintain. Whatever, therefore, tends by the cultivation of useful arts and sciences to improve and facilitate its manufactures; whatever tends, by the elegance of polite literature, to civilize the manners and refine the tastes of its people; whatever tends to awaken a spirit of literary ambition, by keeping alive the memory of its ancient reputation for learning, cannot but prove of the greatest national advantage."

After describing the value of such societies, the origin and objects of the one just instituted, he appeals to the men of ability in the country, and points out to them their duty in supporting the Transactions of the Society by the fruits of their talents. He further tells them, "They are called on by every tie which can have a laudable influence on the heart of man, by the hopes of success and the infamy of defeat, by the solicitations of a natural instinct which will not suffer their faculties to rest without exertion, and by the authoritative voice of reason and experience which pronounce such exertions salutary, by emulation, by philanthropy, by honest pride, by a glorious sense of the dignity of their country and the dignity of human nature. To such a call Irishmen cannot be inattentive; the God of truth will look propitious on their labours, and a ray from Heaven shall light them to success." And it has done so, as is evident from the rapidly increasing importance of the Academy, though we are very far from thinking that we have done as much as we ought, but we have hopes in the future.

The first chemical paper which we find in the Transactions of the Academy is an admirable one by the Hon. George Napier, on the Manufacture of Gunpowder; it is published in vol. II. 1788.

In vol. III., 1789, we have a paper by Richard Kirwan, "Experiments on the Alkaline Substances used in Bleaching, and on the Colouring Matter of Linen-yarn." In this paper he gave an analysis of barilla, which, for the time, was admirable.

The Academy was becoming known at this time on the Continent, for we find an excellent paper in vol. III., on the Condensation produced by the mixture of alcohol and water, by M. Poujet of Montpellier, in the form of a letter to Richard Kirwan, who at that time enjoyed a considerable European reputation.

Vol. IV. contains a very long memoir of Kirwan, on the strength of acids, and the proportion of ingredients in neutral salts, into the merits of which, nor of his other memoirs, we will not at present enter, as we intend to give in a short time a notice of his labours and life. It also contains "Chemical Communications and Inqui-

ries," by Robert Perceval, M. D. This letter was intended to show that, in distilling nitric acid from nitre, the first portions which come over are heavier than the last, while in the case of muriatic acid the first and last portions are nearly alike, and the middle much less.

Vol. v. contains "Examination of the supposed igneous Origin of stony Bodies," by R. Kirwan,—read February, 1793,—being an attack on the Plutonic geologists.

"A Method of preparing a sulphurous medicinal Water," by the Rev. Edward Kenny, Rector of Moviddy, Cork: read April 6th. This water consisted in a mixture of sulphuret of magnesium, and hyposulphite of magnesia, formed by allowing an equal weight of sulphur and magnesia to act upon one another in the cold for some time.

June, 1793. "On the Solution of Lead by Lime," by R. Perceval, M. D., being an account of a great number of experiments on the action of lime-water, &c., on sheet lead, and some of the salts of lead.

June 4, 1794. "What are the Manures most advantageously applicable to the various Sorts of Soils, and what are the Causes of their beneficial Effect in each particular Instance?" by R. Kirwan. A most admirable paper, which we shall further notice at another time.

June 9, 1794. "Experiments on a new Earth, found near Stronthian, in Scotland," by R. Kirwan; in which, having referred to Dr. Crawford's having made a few experiments on it in the year 1790, and to his description of it, and also the account of its chemical properties by Sulzer, he goes on to say that it appeared from his experiments to be a new earth intermediate between barytes and lime; to the presence of a carbonate of which in arragonite he conjectured was owing the difference between the mineral and calc-spar. He mentions that he was assisted in the investigation by Mr. Higgins, superintendent of the Apothecaries' Hall, whose chemical abilities are well known, and likely to be *eminently* useful to this country.

April 5, 1794. "On the Power of fixed caustic alkaline Salts to preserve the Flesh of Animals from Putrefaction. In a letter to the Rev. G. Graydon, from the Rev. Hugh Hamilton."

In vol. vi. December, 1795, we find two papers, both by R. Kirwan:—1. "Of the Composition and Proportion of Carbon in Bitumens and Mineral Coal." The method which he employed was that of fusing them with nitre. Among other specimens which he examined were Kilkenny and Leitrim coals. 2. "Thoughts on Magnetism," containing some excellent observations on crystallization, which he considered an analogous power to magnetism.

Vol. vii. contains "Additional Observations on the Proportion of real Acid in the three ancient known Mineral Acids, and on the Ingredients in various Neutral Salts, and other Compounds;" by R. Kirwan: read December, 1797.

Vol. viii. contains:—1. "A Description of an Apparatus for im-

pregnating Water and other Substances strongly with Carbonic Acid Gas," by the Rev. Gilbert Austin: read November, 1799. 2. "Analysis of Turf Ashes," by Lord Tullamore: read November 23, 1799. In this paper the author speaks of W. Higgins as his ingenious and learned friend. 3. "Observations on Calp," by the Hon. George Knox: read March 9, 1801. This paper contains rather a good analysis of calp, and appended to it is an analysis of the Lucan spa water. 4. "Observations and Experiments undertaken with a View to determine the Quantity of Sulphur contained in Sulphuric Acid, and of this latter contained in Sulphates in general," by Richard Chenevix, F. R. S.: read May 4, 1801. This is an admirable paper, in comparison with most of the others then published, although he states the quantity of sulphur in anhydrous sulphuric acid to be 61·5 instead of 40. This does not, however, detract from his merit, for Thenard gave 55·6 as the quantity, and Tromsdorff, 70.

Vol. IX., which was published in 1803, contains no chemical paper.

Vol. X. contains:—1. "A Description of an Apparatus for transferring Gases over Water or Mercury," by the Rev. C. Austin: read July 4, 1803. It is simply an account of a good mercurial trough for the sort of gaseous experiments then made. 2. "An Account of a semi-metallic Substance called Menacane, and its Ores," by G. G. Mitchell: read July 4, 1803. It is merely mineralogical, but he mentions many of the properties of titanium before the blowpipe. 3. "An experimental Inquiry into the Nature of gravelly and calculous Concretions in the human Subject, and the Effects of alkaline and acid Substances on them in and out of the Body," by Thomas Egan, M. D., Physician to Simpson's Hospital: read March 6, 1805. This is a long and valuable essay, in which he has collected all the information then known on the subject, and enriched with many experiments of his own. He does not, of course, give any chemical analysis of them, but he speaks of their solution by chemical means; and the whole is interspersed with a great many valuable remarks, both medical and chemical.

Vol. XI., published in 1810, which includes the Transactions of several years, contains but one chemical paper: "An Account of some Chalybeate Preparations in the Pharmacopœia Regis et Reginæ in Hibernia;" by Robert Perceval, M. D.: read in 1806 or 1807. In this paper he makes some very practical observations on the preparations of the acetate of iron, the double tartrate of iron and antimony, and the tinctura muriati ferri.

The period included between the foundation of the Royal Irish Academy to the year 1810, was probably the most brilliant in the history of chemistry. Bergmann, Scheele, and Margraff, had just finished their career, and by their labours created a necessity for a new chemical philosophy, which immediately arose by the labours of Wenzel, Richter, Lavoisier, Guyton Morveau, Berthollet, &c. This great progress was not without its influence on Ireland, as we have just seen by the number of papers read before the Academy,

and by a large number printed separately, or read to the Royal Society, and published in their Transactions. The most distinguished Irish chemists of this period were unquestionably Kirwan, Chenevix, and the two Higginses. Kirwan may be looked upon as the successor of Bergmann, in many of whose views he participated, both in the extent of his labours and the excellence of his character. We shall not occupy ourselves at present with his labours, as we shall do more justice to him hereafter.

Richard Chenevix, though contemporary with the Higginses, published his labours at a somewhat later period. Of his life we know little, except that he was the son of a colonel of artillery who resided in Dublin about the year 1766. His uncle was Dr. Chenevix, Bishop of Waterford, afterwards of Killaloe, the intimate friend of Lord Chesterfield, many of whose letters to him may be found in the published collection. Richard Chenevix happened to be in Paris during the reign of terror, and was thrown into prison in company with some French chemists, from whose conversation about the new chemical philosophy of Lavoisier he imbibed a taste for chemistry, which he pursued with great ardour and success on his being liberated. Besides the paper already mentioned, he published: 1. "Analyses of the Arseniates of Copper and of Iron; likewise an Analysis of the red octohedral Copper Ore of Cornwall, with Remarks on some particular Modes of Analysis"(*a*). These ores were mineralogically described by the Count de Bournon, who appears to have been an intimate friend of his. 2. "Observations and Experiments upon oxygenized and hyperoxygenized Muriatic Acid, and upon some Combinations of the Muriatic Acid in its three States"(*b*). 3. "Analysis of Corundum and some of the Substances which accompany it; with Observations on the Affinities which the Earths have been supposed to have for each other in the humid way"(*c*). 4. "Remarks upon Chemical Nomenclature, London. 1802. 8vo." 5. "Action of Platinum and Mercury upon each other"(*d*). Besides a number of smaller papers of little importance, which appeared in Tilloch's and in Nicholson's Magazines. The paper on the ores of copper is one of the best analytical papers of that time; indeed his analysis of the native red oxide is more correct than that of Proust, or of that given by Klaproth for a specimen from Siberia in 1807. In his paper on the chlorates, he fell into the errors of the time as to the nature of chlorine, nor did he succeed in isolating chloric acid. His paper on the analysis of the corundum is also very good: indeed, in analytical chemistry, there were few who excelled him. There is a circumstance connected with his paper on the "Action of Platina and Mercury upon each other," which deserves to be mentioned, as it led him to almost renounce chemistry. In 1803 an anonymous

(*a*) Phil. Trans., vol. xci. p. 193, for 1801.
(*b*) Phil. Trans., vol. xciii. part i. p. 126.
(*c*) Phil. Trans., vol. xciii. part ii. p. 327, for 1802.
(*d*) Phil. Trans., vol. xcvi. part i. p. 104, 1805.

handbill was published announcing that *palladium*, or new silver, was sold by a Mrs. Forster. This singular way of announcing a discovery led Chenevix to suppose that it was an imposition, and he consequently bought all the palladium on sale at Mrs. Forster's, and commenced its examination under the firm conviction that it was an alloy of some known metals. After considerable labour, he came to the conclusion that it was an amalgam of mercury and platina, made in a particular way,—a conclusion which was evidently the result of some mistake. The paper embodying these results was read at a meeting of the Royal Society by Dr. Wollaston, and printed in their Transactions. Soon after its appearance another anonymous handbill was circulated, offering a very high price for every grain of palladium made by Mr. Chenevix's process, or by any other whatever, but no person appeared to claim the money. In about a year after Dr. Wollaston read a paper in which he acknowledged himself to be the discoverer of palladium, and giving the method by which it was obtained from the crude ore of platinum. After this, of course, there could be no doubt that Chenevix had fallen into error, but it is impossible to account for the motive which led Wollaston to adopt this singular mode of announcing his discovery. But, whatever were his motives, his conduct towards Chenevix was anything but creditable to himself, as a philosopher or as a man, in allowing him to publish what he knew was erroneous. The result was, that Chenevix renounced, at least in a great measure, the pursuit of chemistry. In 1809, however, he showed that the same peculiar liquid was formed by the distillation of all acetates which had been already obtained from acetate of lime. To this body, the peculiarities of which he described, and which he supposed to contain less oxygen than acetic acid, he gave the name pyro-acetic spirit (acetone).

Chenevix appears also to have turned his attention to politics, for he has written several works on the questions which then agitated European Society, namely, the abstract rights of man, &c.

A few years before Chenevix published his first memoir, appeared the publications of two men who have had the misfortune to be well nigh forgotten, not only in Ireland, which is not surprising, but even among chemists in general, a fate which they by no means deserve.

The elder, Bryan Higgins, was born in some part of the county of Sligo, about the year 1737; he was educated as a physician, but I have not been able to ascertain at what college he graduated. Soon after obtaining his degree he went to London, where he practised as a physician with considerable success. He appears to have early directed his attention to chemistry, and to have carried on numerous experiments, the expense of which finally induced him as he himself says, "to open a school of practical chemistry, wherein the pupils might have uncommon advantages, at the same time that my apparatus might be enlarged, and my experiments well conducted at a common expense." He commenced his first course on

the 5th of July, 1774, in Greek-street, Soho, a syllabus of which he published in 1775. In the following year he published a part of this course under the title of "A Philosophical Essay concerning Light, vol. i., London, 1776," the intention being to publish, from time to time, the more important parts of the course. He continued to lecture in a similar manner for several years, and to have been highly patronized, among others, by the then Duke of Northumberland. In 1786 he published his best known work, which appears also to have formed the subject of part of his course, under the title of "Experiments and Observations relating to Acetous Acid, fixable Air, Dense Inflammable Air, Oils and Fuel, the Matter of Fire and Light, Metallic Reduction, Combustion, Fermentation, Putrefaction, Respiration, and other Subjects of Chemical Philosophy." 1 vol., London.

Some time between 1780 and 1790 he appears to have gone to Russia, and to have enjoyed the favour of the Empress Catherine; but I have not been able to ascertain the cause of his visit to her capital. It appears very probable, however, that he delivered several courses of lectures there. The lectures in Greek-street, thus interrupted by his sojourn in Petersburgh, were resumed in January, 1794, under nearly similar circumstances to those already mentioned; and in 1795 he published a sort of extended syllabus of his course, describing the experiments made, and the observations thereon at the discussion after each lecture, under the title of "Minutes of the Society for Philosophical Experiments and Conversations." He appears to have occupied himself a good deal with applied chemistry, and in 1789 he obtained a patent for a cheap and durable cement, composed of sand and lime, and a certain proportion of bone-ashes, the lime being slaked with lime-water instead of common water, and the mixture made use of as rapidly as possible after being made. The subject of cements was very fully treated of in a separate work published soon after, under the title of "Experiments and Observations made with the View of improving the Art of composing and applying calcareous Cements, and of preparing Quicklime. Theory of these, and Specification of the Author's cheap and durable Cement for Building, Incrustation, or Stuccoing, and artificial Stone." London, 1789.

Dr. Higgins was married to a Miss Jane Welland, daughter and heiress of J. Welland, Esq., of King's Inns, London, and he died at his estate of Walford, in Staffordshire, in the year 1820, at the age of 83. There is a very beautiful pencil sketch of him, by Comerford, which shows him to have been rather a handsome man, of an inquiring and penetrating mind, great firmness and decision of character, coupled with great affability of manner(*a*). He was rather a speculator than an experimentalist, and many of his views are, for their time, remarkable for their acuteness and generalizing charac-

(*a*) In the possession of Captain Stephens of this city, who is married to his relative.

ter. His principal works, "Experiments and Observations on Acetous Acid," &c., and his "Philosophical Essay concerning Light," have these characteristics in a most remarkable degree. I shall give a short analysis of them, in order the better to show his position as a chemist, and also to point out the influence of his views on those of his relation and pupil, William Higgins.

A large portion of the "Experiments" is occupied with an account of a series of experiments which he made on acetic acid, in which he describes its mode of preparation, purification, and properties, and the products of its distillation, and their relative proportions. In this part he describes many of the properties of acetone, a body which was already known to Lemery, Geoffroy, Rouelle, Stahl, &c., and mentions its preparation from the acetates of potash, lime, magnesia, copper, &c. Among other properties, he mentions its somniferous or anæsthetic quality, which is now known to belong to all volatile carbo-hydrogens, and to many ethers, and their chlorine and sulphur compounds. He also appears to have thoroughly understood the slow action of oxide of lead on acetic acid, in converting it into carbonic acid and water. In his chapter on the phenomena of combination, he mentions some experiments which led him to suspect the nature of the elements of nitric acid, about two years before its composition was established by Cavendish ; but, as he himself states, it did not amount to a clear knowledge of the fact. In his chapter on "Primary Notions of the Matter of Fire," he appears to have had an indistinct idea of the theory of volumes, when he enunciates a law, "that the matter of fire limits the quantity in which aeriform fluids and bodies containing it can combine chemically."—p. 307. As a consequence of this law, he states, at page 309, that "it is determined that elastic fluids shall unite with each other in limited proportions only, to form denser fluids, or solid bodies ; and that the superfluous quantities shall remain elastic and unaltered." At page 320, he seems to have considered that the atmospheres which bodies form are limited, and to have believed in the possibility of condensing most gases. "There is, undoubtedly, a natural limitation, as we formerly observed, of the forces with which the gross parts of divers elastic fluids compel and are compelled by their respective atmospheres. . . . . Although the force of chemical attraction reaches not far from the particles with any sensible effect, we are not thence to conclude that the attractive virtue ceases at any distances. But, from all the known phenomena, we may infer that the attractive forces, tending to the approximation and cohesion of gross particles, decrease in a duplicate or some higher ratio of the distances, reciprocally ; that the natural resistance to the interposition of the fiery matter is lessened at the smallest, and totally overpowered at small distances, which no eye can measure ; and, finally, that *where the sensible effect of attraction ceases, there repulsion succeeds.*" In this passage, as well as generally, he considered chemical affinity as only another form of attraction of cohesion ; and he, as Berthollet afterwards did, considered that mass had some influence on chemical affinity.

In his Essay on Light, which is a kind of Commentary on the Optics of Newton, we find some admirable ideas, for the time, on the general relations of molecules, which want of space alone prevents my analysing at full length. I shall content myself, therefore, with one or two, taken without distinction. In the chapter, "Of Gravity and Density," he draws the following distinction between these properties. "The specific gravity of a *homogeneous* body is directly as the number of ultimate parts contained in a given space. The densities of different bodies cannot be truly deduced from the specific gravity of them, unless the bodies be composed of the same kinds of matter. The absolute gravity of compounded bodies is not directly as the number of their ultimate parts, or as their quantities of matter. . . So that the absolute gravity of compounded bodies may, in the freedom of speech, be said to be in the compound ratio of the quantities of matter, and of the kinds of matter, of such bodies. The specific gravity of a compound body is in the like ratio, of the quantity and kind of matter contained in a given space. *Specific gravity* and *density* ought no longer to be used as commutable terms. Bodies whose specific gravity is comparatively small may alter the direction of the rays of light, by reason of their density, as much as is done by bodies whose specific gravity is comparatively great, by the like reason of their density."

In this passage he evidently appears to consider that most physical phenomena are influenced by the number of atoms in a given space, but that the weight of the ultimate particles of each particular substance may be different ; at all events, that there is a very intimate connexion between the density of a body and its chemical constitution. In a remarkable chapter, entitled "Of Saturation," in which he sometimes appears to have some ideas similar to those afterwards established by the atomic theory, he has the following passage in connexion with this subject. Speaking of the condensation which takes place, on mixing nitrous acid fumes with air :

"And the greatest reduction of the volume of these fluids, in mixing them, is effected when they are mixed in determinate proportions ; for a superabundant quantity of either fluid, added to the mixed fluids, will increase the volume of the mixture in the same manner as a portion of air added to a portion of air will increase the volume thereof."

His explanation of chemical combination consisted in attributing a mutual attraction to the ultimate particles of the same kind whence they unite in all proportion; but in bodies of a different kind, or the same body in different states, or in combination, there is a repellant power, and hence the excess of repulsive above the attractive forces is truly the cause of saturation, an idea in accordance with many of Berthollet's views.

He looked upon chemical forces as nothing more than varieties of the ordinary laws of motion ; and his views on physical forces, in general, are exceedingly philosophical. He, in fact, deduces all forces from simple attraction, and a polarity which he attributes to matter. He thus announces this idea of polarity : "I am of opinion

that all simple attractions are more forcible in one direction or axis of each atom than in any other, and that all matter hath this polarity of its parts." We could quote a great number of similar passages, but we have given enough to show the tendency of his mind, and his power of seeing the direction of science in his generation. There are two very distinct classes of scientific men ; the first are the careful observers of facts, who never venture outside the domain of experiment and trifling deductions ; and the other composed of bold speculators, who feel, as it were, the future of science, and broach a number of startling theories and ideas, which only, at the end of probably fifty years, might find an architect to construct a permanent structure from, but which, in the mean time, act as a ferment to set minds in motion, and convert what was once a dream into a fact.

William Higgins was in many respects like his uncle, a speculator, and not an experimentalist, qualities which were, no doubt, increased during the time which he spent with his uncle. He also was a native of the county Sligo, from whence he was taken, while still a boy, by his uncle, and to whom he acted as assistant for one or two years previous to his entering Pembroke College, Oxford, where he graduated. After leaving the University, he returned to London, and continued to work with his uncle for some time, until a coolness arose between them, probably resulting from some discussions they appear to have had on the new chemistry then propounded in France, and of which William Higgins was one of the first and warmest supporters, while Bryan still held many of the doctrines of the supporters of the phlogiston theory. After he left his uncle he appears to have been in rather adverse circumstances for some time. In the year 1791, immediately upon the passing of their Act of Incorporation, the Apothecaries' Company of Ireland put an advertisement in the Dublin papers for a competent person to supply the place of chemist to their Hall, to which William Higgins replied, and was appointed chemist, at a salary of £200 *a year*, *apartments*, *coals*, *and candles*,—a salary which, we may remark, appears to have been considered as something *extraordinary*, as may be judged from the following passage of the letter of the Secretary to Higgins, acquainting him of his appointment : "From your character and experience, they have no doubt but you will fulfil the expectations which they entertain of you ; nor would they offer such *high* emoluments to any person whose knowledge and opportunities did not entitle him to their entire confidence" ! Whether the Company thought the salary so very high, that they did not think any amount of work on the part of their chemist sufficient, or for some other reason, Higgins did not remain with them more than two or three years, when he became connected with the Dublin Society, although the salary was much less, as appears by the following minute of the Council of that body :

"Royal Dublin Society, Grafton-street ; Thursday, 18th of June, 1795. The Society purchased a collection of minerals for

£1300. Resolved,—That as Mr. Kirwan, a member of this Committee, has recommended Mr. Higgins as a proper person for the aforesaid purpose, the Committee are of opinion he should be appointed to the same ; and they submit that, from Mr. Higgins's extensive skill in chemistry, he be directed, from time to time, to make such experiments on dyeing materials, and other articles, wherein chemistry may assist the arts, as may occur ; and that, for that purpose, a small chemical apparatus should be procured, and erected at the Repository, under the direction of Mr. Higgins. Resolved,—That it is the opinion of this Committee Mr. Higgins should be rewarded for his trouble therein, in such manner as Mr. Kirwan shall direct, not exceeding the rate of £100 per an.

" Resolved,—That it is the opinion of this Society that the care of the books in their Library be committed to Mr. Higgins."

About the year 1800, a number of professors were appointed under an Act of Parliament, and William Higgins became Professor of Chemistry and mineralogy, which chair he filled until his death in 1825. During the intervening period, the only events which occurred to him, of any importance, were his being sent to London, in 1802, to assist in ascertaining the best kind of hydrometer for the Excise, and a visit of four or five months which he paid to the Continent in 1817.

William Higgins appears to have been a man of peculiar habits, possessing very great abilities, and singularly comprehensive views upon science, but totally deficient in energy, and in the ambition of working out to the end any happy idea in science which might strike him, and in that peculiar tact of putting his opinions forward in such a manner as to call immediate attention to them, without which the most important discoveries may remain for many years neglected and barren. He was incapable of making his age comprehend him. His style of lecturing was very quaint, and a number of laughable anecdotes are still remembered of circumstances the result of this quaintness, but which our space, and our respect for his memory, forbid us dwelling upon. An idea, however, may be formed of his style from his graphic illustration of chemical combination, which he described as a marriage between the ultimate particles of the combining bodies—polygamy being allowed in chemistry even beyond the Mohammedan dispensation,—for in nitric acid one atom of nitrogen marries five atoms of oxygen; and divorce was very common,—that is, chemical decomposition.

Leaving Higgins to amuse his auditory by his quaint lectures, we shall turn to the more serious duty of examining what are his real claims to a place in the history of chemistry. And before we do so we would beg to observe that we do not wish to detract from the glory of that great and excellent man, Dalton, in endeavouring to do justice to the neglected Higgins.

Higgins, if we except a "Syllabus" of his course of lectures, only published two works: the first is entitled, " A comparative View of the Phlogistic and Antiphlogistic Theories, with Inductions. &c.

London, 1789;" and a second edition, 1791; which is the work upon which his claims must entirely rest: for the second,—"Experiments and Observations on the Atomic Theory and Electrical Phenomena. Dublin, 1814,"—is simply an unworthy attack upon Dalton, and an attempt to prove his superior claims to be considered the author of the atomic theory. In order to understand clearly the question which we have to try, it is necessary to say a few words on that theory.

The laws of proportional combination, now recognised as absolutely true, are four in number. Starting from the fundamental law that *the same compound is always composed of the same ingredients*, the first of these laws, in generality, is that usually called the law of *definite or constant proportion.* According to this law, the elements composing any compound whatever are always united in the *same proportion by weight;* thus, for example, water, however formed, or under whatever circumstance it may be found, will always be composed of 1 part, by weight, of hydrogen, and 8 of oxygen; and common salt, of 36 of chlorine and 22 of the metal sodium: in this manner we can finally construct a table containing a number for each body, simple or compound, expressing the ratio in which (or in a multiple or submultiple of which) it combines with every other. This is the usual table of equivalents. That some such law as this existed was perceived very early by the Swedish chemist, Bergman, by Lavoisier and others, but its absolute truth was first fully established by Wenzel, Richter, and Proust. To this law, therefore, neither Dalton nor Higgins have any claim.

The second law, known as that of *multiple proportion*, relates to the circumstance that bodies combine in more than one proportion. It is one of the most remarkable of all, indeed it may be said to include all the others. It shows that when one body combines with another in several proportions, the higher ones are multiples of the first, or lowest. Thus, when oxygen combines with nitrogen to form laughing gas, the proportion will be found to be 14 of nitrogen and 8 of oxygen. If this body be made to combine with oxygen to form nitric oxide, the next body in the series which nitrogen and oxygen forms, it will be found that the quantity of oxygen will be 16; and if this again combine with more oxygen to form a third, the total quantity will be 24, and the fourth body will contain 32 parts, and the fifth 40 parts of oxygen; that is, the second body will have twice, the third three times, the fourth four times, and the fifth five times as much oxygen as the first. If a substance can combine with more than 8 parts of oxygen, the least next quantity it combines with is 16. It never combines with $8\frac{1}{3}$ or $8\frac{6}{7}$ths, or any other fractional quantity, but if it passes 8 it must go on to 16, and if it oversteps 16 it will go to 24, and so on for every body in nature. This law was discovered by Higgins, as we shall see immediately, from the compounds of sulphur, and by

Dalton, a number of years afterwards, from the compounds of carbon and hydrogen, and probably independently of Higgins.

The third law of combination is called the law of *reciprocal proportion*, and teaches that if two bodies combine in certain proportions with a third, they combine in exactly the same proportions with one another. Thus, if 16 parts of sulphur combine with 8 of oxygen, and 27 parts of iron combine with 8 of oxygen, 16 parts of sulphur will be found to be exactly the quantity which will unite with 27 parts of iron; and so on for all bodies. This is one of the most important laws of the whole, and is the one more than any other in relation to which the combining weights of bodies are termed their equivalents, a term which expresses that a certain weight of one body is equivalent to, or goes as far as a certain but different weight of another in the construction of a similar compound. This law was discovered by the German chemist, Wenzel, in 1777, and was enunciated in a very remarkable book which he published in that year at Dresden, under the title of *Lehre von der Verwandtschaft.* It, however, attracted very little attention until the subject was taken up by his countryman, Richter, in his *Anfangsgründe der Stöchiometrie*, 3 vols., Breslau and Hirschberg, 1792-1794; and, subsequently, in his *Neuere Gegenstände der Chemie:* Breslau, 1796-1798.

The fourth and last law is the simplest, and is readily deducible from the others; it may be called the law of *compound proportion*, and is to the effect that the combining proportion of a compound body is the sum of the combining proportions of its components. This law was first exhibited in a clear form by Dalton, but it is, in fact, a self-evident corollary to the others.

Now, from what we have said of these laws, it is quite clear that they did not originate with Dalton in any way. He was, however, the first person who saw the position of the science at the moment, and grasped at the bold views thrown out by others, and moulded them into a complete and perfect whole. The clearness and precision of his exposition of these laws was principally owing to his having adopted the old philosophical doctrine of atoms, which was held by more than one of the Grecian schools, and which is almost as fully developed in Lucretius as in any modern book. By giving this atomic theory a chemical form, and connecting the labours of Wenzel, Richter, Proust, &c., with it, he made them at once simple and popular. The laws of proportion are not Dalton's, the chemical atomic theory is indisputably his.

A strong claim is, however, set up for him, that he was the discoverer of the second law; but, as I will be able to show in the most satisfactory manner, this law was enunciated in the plainest manner by William Higgins, fifteen or sixteen years before Dalton's book appeared. The plea has been put in, that, owing to the little attention which Higgins' book excited when published, Dalton did not know of its existence. It may be so, but still it is very strange that

a book which passed through a second edition two years after the appearance of the first, and which was the earliest, and probably the best essay written in defence of the new chemistry of Lavoisier, which appeared in Great Britain, and which became very well known on the Continent a few years after its publication, should alone, of all other works on the chemical theories of the day, have escaped his notice.

The fame of Dalton does not depend on his being the author of this law. His real glory is, that what were only the first rude ideas in the minds of other men were rendered complete, and of universal applicability, by the force of his genius; there is no need, therefore, of depriving Higgins of the merit which is so justly his due. We shall now point out those passages in his book in which this discovery is clearly indicated, and also any other points in which he has stated anything new for his time.

W. Higgins has the merit of being one of the first chemists, if not the very first chemist in Great Britain or Ireland, who adopted the new views of the French chemists, in support of which he wrote the "Comparative View." He adopted these views very early, for he says, in his preface to that work, printed in 1789, that he had been an antiphlogistian for four years previously. The work is divided into ten sections:—The 1st, treating of the composition and decomposition of water. 2nd. Of the composition of acids. 3rd. Of the vitriolic acid. 4th. Of the nitrous acid. 5th. Of the marine acid. 6th. Of the calcination (oxidation) of metals, *via sicca*. 7th. Of the calcination of metals by steam; and the decomposition of water. 8th. Of the reduction of metallic calces by charcoal; and the formation of fixed air. 9th. Of the solubility of metals. 10th. Of the precipitation of metals by each other. The great question which then agitated the chemical world was, "whether or no all bodies which burn or calcine, such as sulphur, phosphorus, charcoal, oils, metals, phlogisticated air (oxygen), &c., contain the matter of light inflammable air (hydrogen), as one of their constituent principles." This question he examines with great ability and acuteness; but to the part of his book referring to this subject it is unnecessary to refer further, as the doctrine which he attacked has no longer the slightest interest for us: I shall, therefore, return to his views upon the laws of proportion.

The first idea of the law of multiple proportions occurs in the section "on the vitriolic acid." In this section he examines the doctrine of the phlogistians, that sulphur was a certain basis and phlogiston. Among the experiments which he quotes against them is the following:—"If steam be passed over fused sulphur, light inflammable air (hydrogen) will be obtained, as Dr. Priestley has observed. From whence does this air come? The phlogistians will undoubtedly say that it is disengaged from the sulphur. If so, the basis of sulphur attracts water with greater force than it does phlogiston; but will water and the basis of sulphur form vitriolic acid? By no means, though volatile vitriolic acid (sulphurous acid) is

formed in this process, which actually requires dephlogisticated air (oxygen) for its constitution, a clear proof that water must be decomposed"(*a*). After mentioning a number of objections against the phlogistian view, he goes on to say: "A good many more facts might be urged on this subject, but, in my opinion, enough has been adduced to convince an impartial reader that all the phenomena above recited are only explicable by entirely leaving out phlogiston, and supposing sulphur to be a simple substance, whose ultimate particles attract dephlogisticated air with forces inherent in themselves, independent of phlogiston or concrete inflammable air, as an alkali does an acid, or gold and tin, mercury; and likewise supposing the combustion of sulphur to be as simple a process as that of light inflammable air"(*b*).

"According to Mr. Kirwan, 100 grains of sulphur require 143 grains of dephlogisticated air to convert them into volatile vitriolic acid (sulphurous acid); but they require much more in order to become perfect vitriolic acid (sulphuric acid). Highly concentrated vitriolic acid contains two parts of dephlogisticated air, and one of sulphur, exclusive of water. . . . We may conclude that the ultimate particles of sulphur and dephlogisticated air contain equal quantities of solid matter; for dephlogisticated air suffers no inconsiderable contraction by uniting to sulphur in the proportion merely necessary for the formation of volatile vitriolic acid. Hence, we may conclude, that in volatile vitriolic acid a single ultimate particle of sulphur is intimately united only to a single particle of dephlogisticated air; and that in perfect vitriolic acid every single particle of sulphur is united to two of dephlogisticated air, being the quantity necessary to saturation"(*c*).

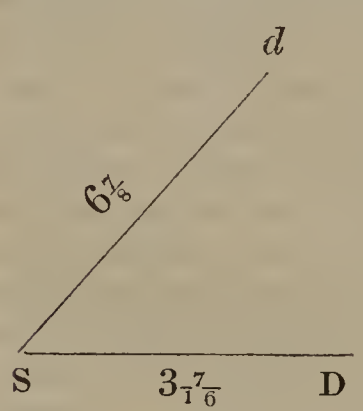
"As 2 cubic inches of light inflammable air (hydrogen) require but one of dephlogisticated air (oxygen) to condense them, we must suppose that they contain equal number of divisions, and that the difference of their specific gravity depends chiefly on the size of their ultimate particles; or we must suppose that the ultimate particles of light inflammable air require two or three, or more of dephlogisticated air to saturate them. If this latter were the case, we might produce water in an intermediate state, as well as the vitriolic or the nitrous acid (nitric acid), which appears to be impossible; for, in whatever proportion we mix our air, or under whatever circumstance we combine them, the result is invariably the same. This likewise may be observed with respect to the decomposition of water. Hence, we may justly conclude that water is composed of molecules, formed by the union of a single particle of dephlogisticated air to an ultimate particle of light inflammable air, and that they are incapable of uniting to a third particle of either of their constituent principles"(*d*).

In these extracts we have not only the second law of proportion clearly indicated, but his idea of the composition of water is all but

(*a*) Comp. View, p. 33. Second Ed. (*b*) Ibid. p. 35.
(*c*) Ibid. p. 36. (*d*) Ibid. p. 37.

perfect; and he has almost enunciated the volume theory of Gay-Lussac in the last passage, where he assumes that equal volumes of bodies contain the same number of divisions, that is, of atoms. He did not give the composition of sulphurous and sulphuric acid correctly, simply because Kirwan's numbers, upon which all his calculations are founded, differ very considerably from the truth; but whether sulphuric acid consists of two atoms of oxygen, or of three atoms, does not in the slightest manner affect his views.

But not only did he apply these views to the compounds of sulphur and oxygen, and to water, but also to the compounds of nitrogen and oxygen, the composition of nitric acid being very accurately given by him in the following passage:—"In my opinion the purest nitrous acid (nitric acid) contains five of dephlogisticated air (oxygen), and one of phlogisticated air (ażote); nitrous gas, according to Kirwan, contains two volumes of oxygen gas, and one of azotic gas; according to Lavoisier, 100 grains of nitrous gas contain 32 grains of phlogisticated air, and 68 of dephlogisticated air. I am of the former philosopher's opinion. I likewise am of opinion that every primary particle of phlogisticated air is united to two of dephlogisticated, and that these molecules are surrounded with one common atmosphere of fire (caloric)." Throughout the "Comparative View" he uses diagrams representing triangles, &c., for expressing the affinity of the different molecules for one another; and over each line is placed a number expressing the relative force of affinity. Thus, where S is a particle of sulphur; *d*, a particle of dephlogisticated air, which it attracts with a force of $6\frac{7}{8}$, and the compound of these two sulphurous acid: as the attraction of bodies is mutual, S is supposed to possess one-half of this force, that is $3_{1}\frac{7}{6}$, which is supposed to be its utmost exertion, the other half of the $6\frac{7}{8}$ being supposed to be exerted by the particle *d*, causing them to unite. Now, if we suppose another particle of dephlogisticated air (ogygen), D, to have a tendency to unite to S, with the force also of $3_{1}\frac{7}{6}$, in order to form perfect vitriolic acid (sulphuric); to receive D, S must relax its attraction for *d* one-half; that is, the force of $3_{1}\frac{7}{6}$ will be divided and directed in two different points, which will reduce the attachment of dephlogisticated air and sulphur in sulphuric acid to $5\frac{1}{1}\frac{1}{8}$: thus, according to him, accounting for the greater facility with which the second atom of oxygen is removed from such compounds. This mode, clumsy as it is, was exceedingly original, and expressed something more than the symbols of Dalton, but included more than the state of chemistry at that time, or even at present, would warrant.



It may be necessary to remark here, that Higgins applied the term "ultimate particle" to the last division of elementary matter; and the term "molecule," to the last division of a chemical com-

pound. The first corresponds to an atom of a simple substance (adopting the atomic theory); and the second, to a compound atom.

Higgins' notions of chemistry were extremely mathematical; in fact, from many passages throughout his book it would appear that he considered that chemical affinity should be considered from a purely mechanical point of view. The following passage, in which he takes motion, or rather the momentum, of the ultimate atoms into account, is certainly very singular:—"Therefore," speaking of the nature of the action of sulphuric acid on iron, "it is the superior force of the metal, and the *proportional velocity* of the motion of oxygen towards it, that leave the particles of sulphur so circumstanced as to enable them to decompose water in the manner already described." A great number of passages of a similar nature, full of ingenious ideas, might be given, which show that he possessed, in a very high degree, an imaginative and philosophical mind; but, as I have already passed the limits assigned to such essays as the present, I must refer the reader to the original work, which is very well worth an attentive perusal.

That I have not overstated the claims of William Higgins to be considered the discoverer of the second law of proportions will be seen from the following statements with reference to this point, made by Sir Humphrey Davy, Dr. Thomson, and Dr. Daubeny. Davy thus speaks of the matter: "That the proportion in compound gases are definite have long been generally acknowledged; but Mr. Higgins is, I believe, the first person who conceived that, when gases combined in more than one proportion, all the proportions of the same elements were equal; and he founded this idea, which was made public in 1789, on the corpuscular hypothesis that bodies combine particle with particle, or one with two or three, or a greater number of particles." Mr. Dalton, about 1802, adopting a similar hypothesis, apparently without the knowledge of what Mr. Higgins had written, extended his views to compounds in general(*a*). Dr. Thomson makes the following remark, the first line being, however, a simple absurdity: "The atomic theory was taught by Bergman, Cullen, Black, &c." (the two latter were supposed to be Scotchmen, and of course nothing could be discovered that was not in some way anticipated by men of that country), "just as far as it was by Higgins. The latter indeed states some striking facts respecting the gases, and anticipated Gay-Lussac's theory of volumes . . . ;" (the latter, it must be remembered, was only a Frenchman) (*b*). Dr. Daubeny, is however, more just than Thomson, his account being as follows:

"It would appear that we owe to Mr. Higgins, formerly of Pembroke College in this University (Oxford), the first enunciation of this latter fact (the law of multiple proportion); as in a work published by him in 1789, entitled, 'A Comparative View of

(*a*) Elements of Chemical Philosophy, p. 107.
(*b*) Annals of Philosophy, December, 1813.

the Phlogistic and Antiphlogistic Theories,' he distinctly states that one ultimate particle of sulphur, and one of oxygen, constitute sulphurous acid, whilst one ultimate particle of sulphur and two of oxygen constitute sulphuric acid; and moreover, that in the compounds of azote and oxygen, the ingredients are to each other in the proportion of 1 to 1, 2, 3, 4, 5, respectively.

"He also throughout his work adheres to the corpuscular hypothesis, supposing matter to combine particle to particle, though in this latter respect indeed he only followed the notions of former chemists, who, if they thought at all upon the subject, generally leaned to the opinion that chemical combination took place between the ultimate molecules of matter, and not, according to the Kantian doctrine, owing to a mutual penetration of one substance by another.

"It is a pity for Mr. Higgins' reputation that he had not struck out this idea a *few years later*, when, as its correctness could have been substantiated by an appeal to facts, it is probable that his genius might have overleaped the boundary that separates the point to which we are led by his researches from that afterwards attained by Mr. Dalton.

"As it was, the want of precision in chemical analysis rendered it impossible at that time to collect a number of instances sufficient to establish the law as holding good universally; . . ."(*a*)

These passages fully justify the view I have taken of the labours of Higgins, especially the last, which puts the matter in the clearest point of view. I could quote a number of similar opinions, but I believe those which I have given sufficient.

Hasty and imperfect as this sketch is, I hope I have succeeded in rescuing some deserving Irishmen from oblivion; and that I have not, on the one hand, given too much importance to some, or unjustly detracted from the merits of others. In conclusion, I would express a hope that the other branches of science may find some persons to rescue from neglect the memories of their humble, but deserving, Irish votaries(*b*).

(*a*) Daubeny's Introduction to the Atomic Theory, pp. 33, 34.

(*b*) I am indebted for most of the details of the life of Bryan Higgins to Captain and Mrs. Stephens, of Holles-street (the latter the niece of Dr. Higgins), who in the kindest manner supplied copies of all his works, and of those of William Higgins, and also the beautiful pencil sketch of Bryan Higgins mentioned in the text. I beg also to return my best thanks to my friend Dr. Leet, of Stephen's-green, for the information which he communicated to me relative to William Higgins' connexion with Apothecaries' Hall.

MEMOIR OF THE LATE THOMAS LITTLE, M.D., LL.D., T.C.D., F.R.C.S.,

SURGEON TO THE SLIGO COUNTY INFIRMARY.

This eminent surgeon and physician was the eldest son of William Little, Esq., formerly Deputy Examiner in the Irish Court of Chancery, which office he held under his brother-in-law, Lyndon Evelyn, M.P. for St. Ives. Upon the abolition of this office, Mr. Little was appointed to the secretaryship of the Paving Board, a Government situation under the old Corporation of this city, which post he held for a great number of years, until superannuated in 1828, at the age of 77. The subject of this memoir was born in Jervis-street, Dublin, on the 11th November, in the year 1782, and, consequently, at the period of his death by cholera on the 14th of August, 1849, was in his sixty-seventh year.

In 1799 he matriculated in Trinity College, Dublin, and in the following year was bound apprentice to Mr. Mac Evoy, the celebrated surgeon. This able and eccentric man, the Irish Abernethy of his day, notwithstanding the wide gulf which, in those times, separated the master and the pupil, the professor and the student, and in his case the more particularly, owing to a natural harshness and even coarseness of manner, and quickness of temper, which seldom observed the refinements of life in his hospital and lecture-room intercourse with his pupils, early elicited in his young disciple the warmest admiration and most profound reverence for his genius and abilities; and to the last, Mac Evoy's maxims, whether delivered in lecture, or dropped in casual conversations, were treasured up with astonishing fidelity, in a memory that seldom allowed a professional fact or a scientific hint to escape; and, on the other hand, it is well known with what eccentric affection, and by what awkward demonstrations of good-will, old Mac Evoy honoured his young friend.

In the year 1803, Mr. Little, then in his twenty-first year, became a prominent and popular member of the College corps, in which he was soon raised from a private to be corporal, a sergeant, and finally to that important post of *fugleman*, and afterwards contested the lieutenancy, but whether successfully or not the writer's recollections do not enable him to record. At this period he was remarkable for feats of activity, and his performance of the very difficult functions of fugleman at reviews in the Park frequently elicited the admiration of the veterans of that day, in whose eyes this now obsolete and absurd department of military tactics possessed a peculiar and most vivid charm. It was about this period, when performing one of his favourite feats of vaulting over an open room door, as it swung under his hands, that he received a frightful compound fracture of the right tibia and fibula, a few inches below the knee, which at one time promised so badly that Mr. Mac Evoy had brought his instruments and assistants into the sufferer's bed-room,

to perform amputation; but, having fortunately discerned some contra-indication to this *dernier resort*, its consideration was deferred, and the result was a perfect cure.

It was at this period also that Dr. Little formed many valuable acquaintances with men who have since distinguished themselves in law, literature, science, the Church and the State; and much of the zest of his well-known and incomparable conversational powers was derived from anecdotes of the morning drill and midnight watch of these troublous times, in company with the Cramptons, Blackburnes, and Norths, of past and present days, on which occasion a well-furnished canteen of shrub punch formed quite as necessary an item of the academico-military equipment as the firelock or cartouch-box, and under the influence of which upon young, ardent, and excitable minds, it is not difficult to imagine that many and many a manœuvre was accomplished, and many a *chef d'œuvre* of strategy effected, more suited to enliven a page of Lever or Maxwell than to establish the military reputation of the academic corps in the stern eye of a Wellington or a Napier.

In the year 1804, by the interest of Mr. Obrey, then Surgeon-General, and an old friend of his father's, Thomas Little having expressed a decided predilection for a military life, an inclination probably fostered by the recent memory of the glories of his fugleman-days in the College corps, he was appointed on the medical staff at Cork, where he renewed his acquaintance and friendship with his old school-fellow, the lamented Richard Carmichael. Through the subsequent rather long lives of both this friendship was matured by frequent meetings and constant correspondence, and by a mutual appreciation of each other's characters and talents; within a few months both were removed, the one by a fearful accident, the shock of which was felt from one end of the country to the other, and the survivor almost as suddenly by an attack of cholera in its most acute and deadly form of invasion.

While stationed on the Staff in Cork, an attachment, which subsequently resulted in his marriage, and which would go far to establish the popular fancy of the destiny which attaches to this condition, was formed between Dr. Little and Miss Swayne, daughter of Benjamin Swayne, Esq., a gentleman of independent fortune in the neighbourhood of that city. The youth of the parties, and other considerations, rendering the match not a desirable one to the old people, all interest was made to remove the gentleman, who was at that time considered one of the handsomest and most agreeable men in Cork, the result of which was his immediate appointment to the assistant-surgeoncy of the 23rd Dragoons, then named for the Peninsula. He joined this corps at Chatham, but, by some change of design at the War Office, in a few weeks they were ordered to Fermoy, within eighteen miles of Cork, where the intercourse was immediately renewed, as a matter of course; all parties yielding with a good grace to what now might be considered a special manifestation of *destiny* in its favour.

When the 23rd were in reality ordered, in about eighteen months afterwards to the Peninsula (where, by the way, our readers will recollect they were shortly afterwards nearly annihilated at the battle of Talavera), Dr. Little (now a married man) effected an exchange into the North Mayo Militia, as surgeon, which commission he purchased, and subsequently sold for £500, as was the fashion of the times. This step it was which laid the foundation of his long and successful connexion with the province of Connaught, and of his undisputed reputation as the most distinguished practitioner and operator who had ever pitched his tent west of the Shannon.

During the eight years that Dr. Little was surgeon of the North Mayo Militia he had rapidly acquired a character as an operator of extraordinary merit, and a physician of great success and skill, so much so that the poor of the various localities where the regiment was quartered, in the provinces of Leinster, Munster, and Connaught, attracted by the reputation which preceded and accompanied him, were accustomed to flock in hundreds to his military hospital, where that unbounded zeal in his profession, that untiring activity of mind and body, and that universal philanthropy, which he retained to his last day of life, and to which, in fact, that valuable life was ultimately sacrificed, led him to toil unceasingly in unpaid, but not unrequited services; for the tenants of the neighbouring gentry, carried back to their landlords and friends the warmest, and sometimes exaggerated eulogiums on his skill and attention, so that he invariably and at once occupied the leading practice of the entire neighbourhood. When the Dispensary Act appeared (in 1807) he immediately endeavoured to impress upon the gentry of the localities where the regiment then happened to be quartered, the immense value of its provisions for the sick poor, and succeeded in establishing, *en route*, three dispensaries, one in Rathkeale, county Limerick, one in Arklow, county of Wicklow, and a third in Tuam, county of Galway.

In the year 1814 the North Mayo Militia, then lying at Tuam, were disbanded, and Dr. Little, having resolved on adventuring metropolitan practice, took a house on Ormond-quay; but during his sojourn in Tuam, then a flourishing town (very different indeed from the indigent and deserted aspect it now presents), and the centre of a thickly populated and even wealthy country, practice flowed so thick and fast upon him, and the solicitations of his brother officers, almost all men of wealth and influence in the adjoining county of Mayo, were so urgent that he should remain where he was, that, after some reflection, though with much regret, he disposed of his house in Dublin, and soon afterwards, at the early age of 34, found himself in the receipt of nearly £1500 a-year, the proceeds of his professional labours, perhaps double the annual sum ever derived from medical practice in the province of Connaught before.

Under the patronage of Lord Decies, then Archbishop of Tuam, a prelate of unbounded benevolence and princely hospitality, the

first dispensary ever established in the county of Galway was opened in the year 1814, by the suggestion and under the management of Dr. Little, with a small hospital adjoining, of eight beds, for operative surgical cases; and such were the circumstances of the country, or the estimation in which its services were held, that for many years its average income was about £400 a-year. To this miniature hospital, some twenty-five years since, crowds of the halt, and maimed, and blind, from every county in Connaught, and from many of Munster, Leinster, and the North, were constantly flocking; and in a small cabin of an insignificant country town in the far west, the curious in surgery would be surprised to find a rapid succession and unceasing variety of the most formidable cases, either awaiting or in the different stages of convalescence after operation. To the present day there are hundreds of the aged poor about the counties of Limerick, Clare, Mayo, Galway, Sligo, and Roscommon, who will tell, with the greatest gravity, and with a downright belief in what they have repeated so often as to make the tale pass current even with themselves, that in such a year, and at such a place, Dr. Little removed such a man's eye, washed it, and restored it perfectly sound to its orbit, or performed similar excisions and ablutions with the liver, bowels, and brains of others. Nor do we instance these popular exaggerations merely in order to dwell upon their absurdity, or excite a smile of compassion for human credulity, but because we consider the existence of such as the best possible proof of the extraordinary boldness and success of Dr. Little as an operator.

It is much to be regretted that, with a mind stored with all that was valuable in either ancient or modern medical literature, together with a vast amount of miscellaneous information on almost every subject (for to the last day of his life, and during the busiest periods of his practice, he was an industrious reader and student), with the most acute powers of observation, an exceedingly correct and cautious judgment, a wonderfully retentive memory, which enabled him, when conversing on medical subjects, to recall the minutest details of relevant cases which had interested him twenty or thirty years before, and to illustrate his positions with a torrent of quotations, frequently in the very words of the authors,—possessing a minute acquaintance with, and an experimental knowledge of almost every modern suggestion or established improvement in each department of his profession;—it is much to be regretted, we repeat, that, with all these advantages, together with a great facility of expressing his ideas simply and clearly (as many letters in the Editor's possession abundantly prove), he should never have contributed to the literature of that profession which he so ardently loved and successfully cultivated. The secret of his backwardness to commit himself to the irrevocable step of publication can only be explained on the ground of a morbid sensitiveness to public opinion, a weakness or a virtue as the reader may deem fit to term it, which was a remarkable feature of his character, and an apprehension that his opportunities for cultivating a minute acquaintance with morbid anatomy

had been much too limited (as, in the most extensive *country* practice, they necessarily must be) to enable him to lay his views before the profession in that perfect and comprehensive style which so elicited his admiration in the writings of others of the modern pathological school of authors; and anything less than the perfection he aimed at would not have satisfied him.

As an operator it was scarcely possible that he could be excelled; and in the country he performed every form and variety of operation, amputation at hip-joint, of lower maxilla, lithotomy, hernia, ligature of all those vessels ordinarily submitted to this operation. He possessed great nerve and celerity, with the most astonishing aptitude and readiness in adopting, without a moment's hesitation or confusion, exactly the proper series of manipulations which more or less vary the history of every great operation.

In the year 1832, Dr. Little, having already refused the proffered appointments to the Wicklow and Longford County Infirmaries, and while in the zenith of his reputation and practice, was nominated, without the preliminary steps of solicitation or canvass, to the surgeoncy of the Sligo County Infirmary, vacant by the death of Mr. Bell, by cholera. The highly complimentary manner of this offer, and the fact that this change of residence, while it introduced him to a new and most influential circle of practice, would not materially remove him from his lucrative connexion with the county of Mayo, at once determined him on accepting this highly honourable position. An illegal election having been held in the first instance, Mr. Cooper, of Markree Castle, instituted proceedings in the King's Bench, which quashed the appointment then made, and Dr. Little was on the subsequent election appointed by a large majority. The best evidence of the estimation in which he was held during the last sixteen years of his life, will be found in the notices of his lamented death by the local Sligo papers of diametrically opposed political principles(*a*), and in the all but unanimous appointment of his eldest son, Dr. W. S. Little, to the surgeoncy of the excellent institution so long and effectually presided over by himself.

(*a*) See the Sligo Journal of August 17th, and Champion of August 18th, 1849.

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